



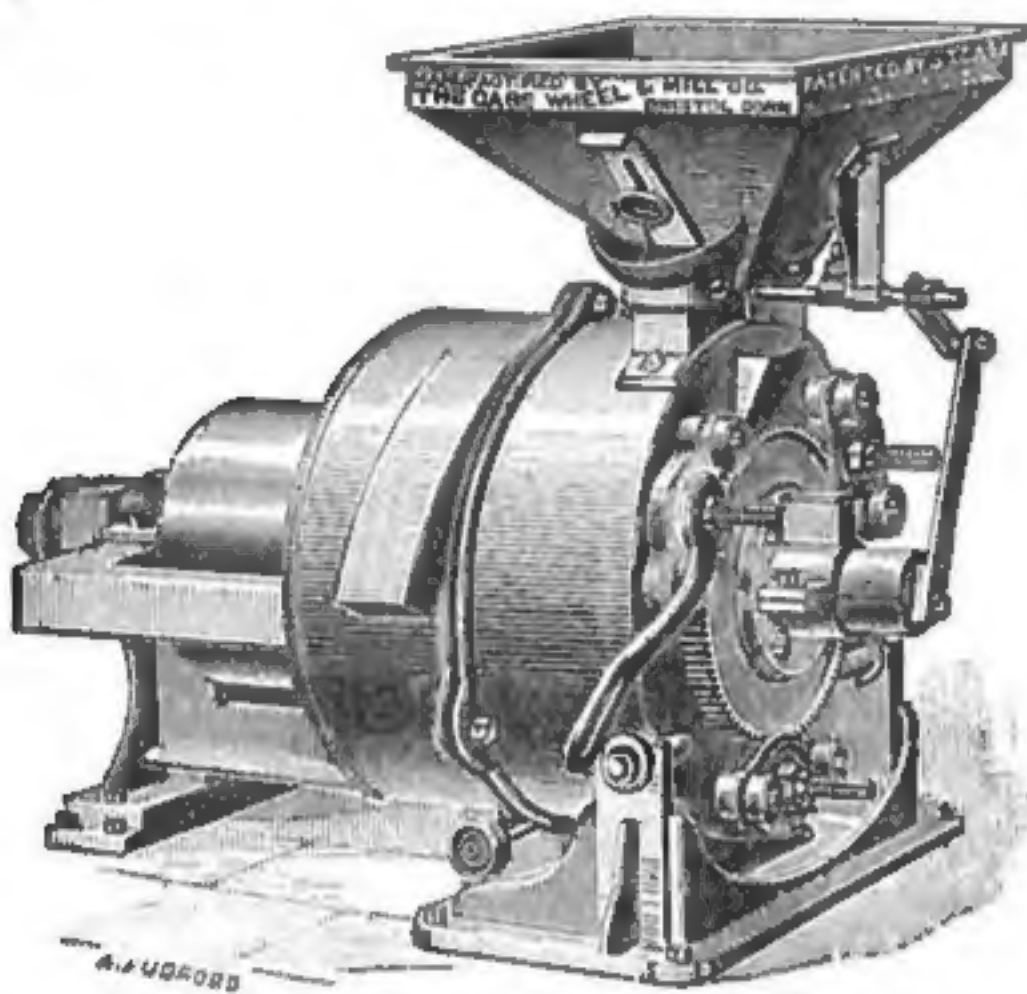
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXI. No. 15.

BUFFALO, N. Y., DECEMBER 9, 1889.

\$1.50 PER YEAR.



VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS.

(J. T. CASE'S PATENT)

FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:

"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & Co., Meriden, Conn.

"Superior to any mill in use."—Geo. WESTON, Bristol, Conn.

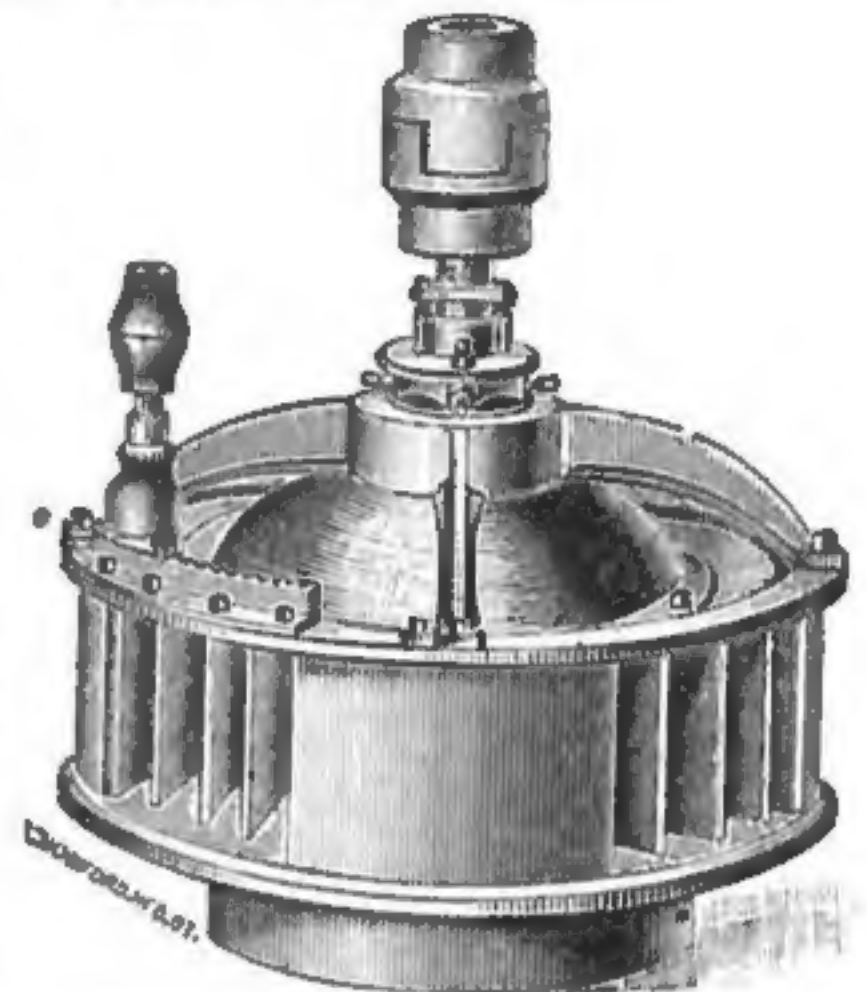
"The best satisfaction in quantity and quality."—CHILD'S ELEVATOR, Manchester, Ct.

"We take pleasure in recommending it."—GARLAND, LINCOLN & Co., Worcester, Mass.

SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.

The Improved National Turbine Water Wheel

The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.



The Case Wheel & Mill Co., Bristol, Conn.

THE SUCCESS

BOLTER AND DRESSER

THE J.B. ALLFREE

TWO-REEL SCALPER

WE BUILD

FLOUR MILLS, CORN MILLS

AND

HOMINY MILLS

KEYSTONE

FOUR-ROLLER WHEAT MILL

WE FURNISH

EITHER THE SHORT, MEDIUM OR LONG SYSTEM

THE ALLFREE

CENTRIFUGAL REEL

THE SUCCESS

CORN MEAL BOLT

THE KEYSTONE

PURIFIER AND ASPIRATOR

THE ALLFREE

ROLLS REGROUND AND REGORRUGATED

THE KEYSTONE

HULLER AND PEARLER

THE KEYSTONE

HOMINY SEPARATOR

THE KEYSTONE

FLOUR PACKER

THE J.B. ALLFREE

ALLFREE PATENT

THE CLIMAX

CORN CLEANER

THE LITTLE HOOSIER

BRAN DUSTER

DUFOUR'S

BOLTING CLOTH SPECIALTY

SHAFTING, GEARING AND PULLEYS

FURNISHED AT LOW PRICES

THE ALLFREE

FLOUR PACKER

THE J.B. ALLFREE

ALLFREE PATENT

THE ALLFREE AUTOMATIC ENGINE

THE BEST MILL ENGINE IN THE WORLD

SEND FOR A NEW ILLUSTRATED CATALOGUE.

ADDRESS, THE J. B. ALLFREE CO.

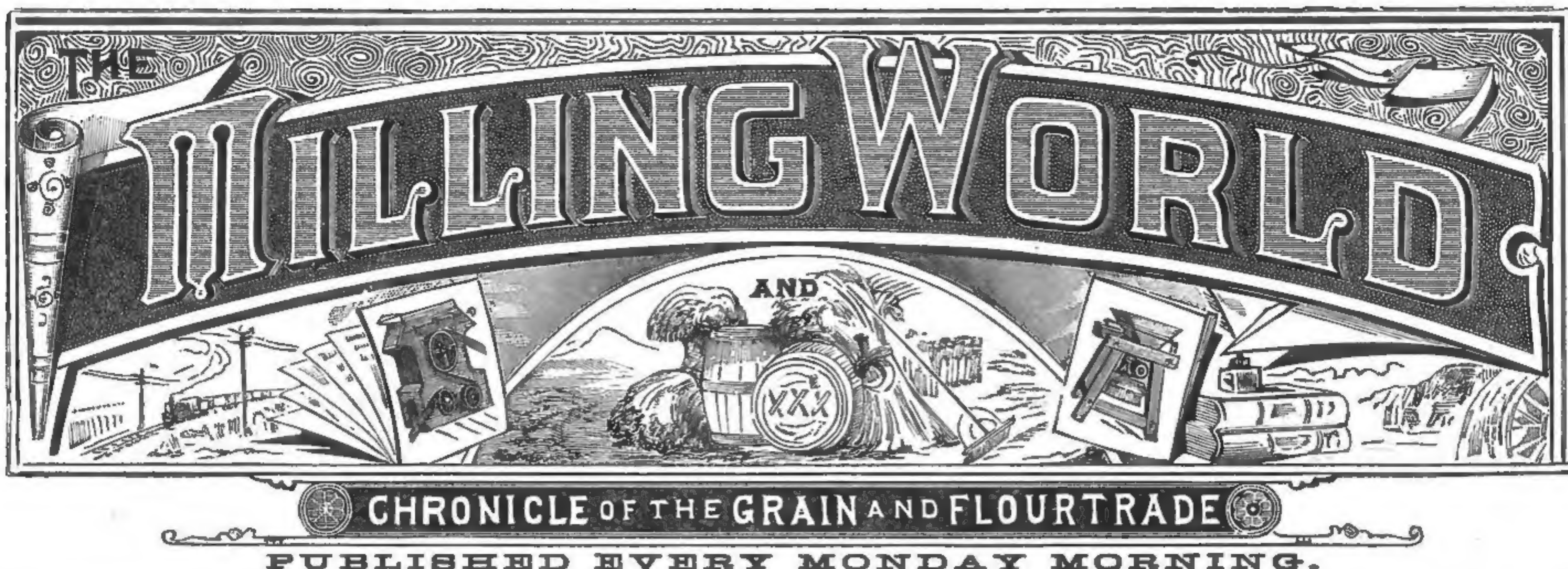
INDIANAPOLIS, IND. U.S.A.

76 TO 86 SHELBY ST.

CASE.

CASE MFG. CO., COLUMBUS, O.
GENTLEMEN: If we were to build a hundred mills we
would not permit any other than the "CASE" roll to
enter them. They are the best roll on earth.
Yours truly,
W. C. MANSFIELD & CO.
CLEVELAND, TENN., AUG. 29, 1889.
W. C. MANSFIELD & CO.,
MERCHANT MILLERS,

CASE.



Vol. XXI. No. 15.

BUFFALO, N. Y., DECEMBER 9, 1889.

\$1.50 PER YEAR.

LATE indications in Canada point to the readjustment of duties on wheat grain and wheat flour imported in such a way that the Canadian miller will no longer be compelled to sustain American competition in flour at the present disadvantage. No fault can be found with such a readjustment on this side of the border. The trouble is that the readjustment has been delayed so long that enough American flour has gone into Canada to make the competition felt for months after the duties shall have been readjusted.

RECENTLY there has been a good deal said about the erroneous weighing of grain received at the port of Buffalo. In another column is presented the latest discussion of the matter. The Duluth accusation against the Buffalo weighers seems to be conclusively answered and refuted by Weighmaster Smith of the Buffalo Merchants' Exchange, and his direct charges against one Duluth house remain to be met. Of course exact justice and the greatest possible accuracy ought to be, and are, desired in this port. Buffalo grain matters have had some bad features lately, but the charge of wrong weighing at Buffalo elevators has not yet been proved.

OUR readers will do well to observe carefully the advertisement, on another page, of the Henry G. Allen Company, 126 Washington street, Chicago, Illinois. This progressive house have for years been experimenting with a photographic process for the reproduction of printed matter without the costly labor of type-setting, and at last they have perfected and patented a process, called the "gelatine process," which enables them to reproduce "The Encyclopædia Britannica," a work in 24 volumes, containing over 20,000 pages, so that they can sell it for half the prices asked for the work by other publishing houses. Their edition sells for the wonderfully low rates of \$2.50 per volume in cloth, \$3.50 in sheep and half seal Russia, and \$4.50 in half morocco, rates that place this great compendium of art, science, knowledge and literature within the reach of all. Notwithstanding the extraordinarily low prices, the work is commendable and admirable in every way. The binding is firm and durable, the paper is good, the printing is clear and legible, the maps and engravings are reproduced with the utmost fidelity, and the work throughout is satisfactory. Address them for specimen pages. There is no longer any reason for paying \$5, \$6, \$7, \$8, \$9 or \$10 a volume for "The Encyclopædia Britannica." The Henry G. Allen Company have made such prices for this work unreasonable.

ACCORDING to the reports of British journals during the past ten months, there has been "a great revival of trade in Great Britain," "laborers are more generally employed and better paid than for years past," and "a real tidal wave of prosperity is sweeping over Great Britain." All this reads well, and it would be pleasant to believe that it is all strictly true. Turning to the returns of the British Board of Trade, the student of current events will find reasons for doubting the rose-colored statements. Those returns show that during the month of October, this year, the "booming"

land of Great Britain sent out 24,799 emigrants, against 23,468 in October, last year. During the first ten months of 1889 the number of emigrants from Great Britain was 233,880, against 256,066 for the same time in 1888. The fact that nearly a quarter-million of laborers found it expedient or necessary to forsake their native land in ten months speaks volumes not altogether confirmatory of the stories of the "wonderful prosperity just now prevailing in Great Britain." There seems to be a hitch somewhere between the stories and the facts. The British emigrant and industrial situation seems to resemble the American wheat situation, in which "the statistical position is undoubtedly very strong," while wheat itself seems to be about as weak as it could possibly be and not be dead. What are "boom" figures and stories really worth, anyhow? Are they worth any more in Great Britain than in Manitoba?

DURING the past two or three years some of our friends among the mill-builders and mill-furnishers have occasionally complained to us that THE MILLING WORLD has been devoted to the interests of the millers, as a class, too much, and to the interests of the mill-builders and mill-furnishers, as a class, too little." We have never resented the complaint, well knowing that the thoroughly independent course we were and are pursuing is the best course to pursue, and believing that all our patrons would in the end understand it to be the best. Time has justified our belief. Within the past week one important house, engaged in building and equipping mills and in manufacturing high-grade milling machinery, has written to us, commenting on our stand in the milling-machinery litigation matter, saying, among other things: "We are glad to see that you are another firm who are independent enough to tackle corporations who are unscrupulous in their proceedings and who deserve the severest kind of censure by all milling publications. It is certainly right that milling-journals should do this thing. The miller looks to these journals for advice as well as information, and if more of them were like you, we think it would be better for the milling public as well as ourselves and brother mill-furnishers." We have scores of letters, hundreds of them, received during the past ten months, containing similar expressions of approval, and showing that millers instinctively turn towards the independent journal whenever their interests are threatened, and whenever they need a spokesman. We shall continue to speak for our friends, the millers and the manufacturers of milling supplies, against all combinations that seem to infringe upon their individual or collective rights and privileges. We believe, with the firm quoted in this paragraph, that it would be vastly better for all concerned were the milling-journals to show themselves willing to speak out frankly and squarely. Of course some of them have a close underground connection with establishments that will not permit them to speak, but the really live independent milling-journals would seem to have no excuse for maintaining silence when the interest of the millers is at stake. Subsidized silence may be profitable, but in the end it will be understood by the men for whom the silent organs should speak.

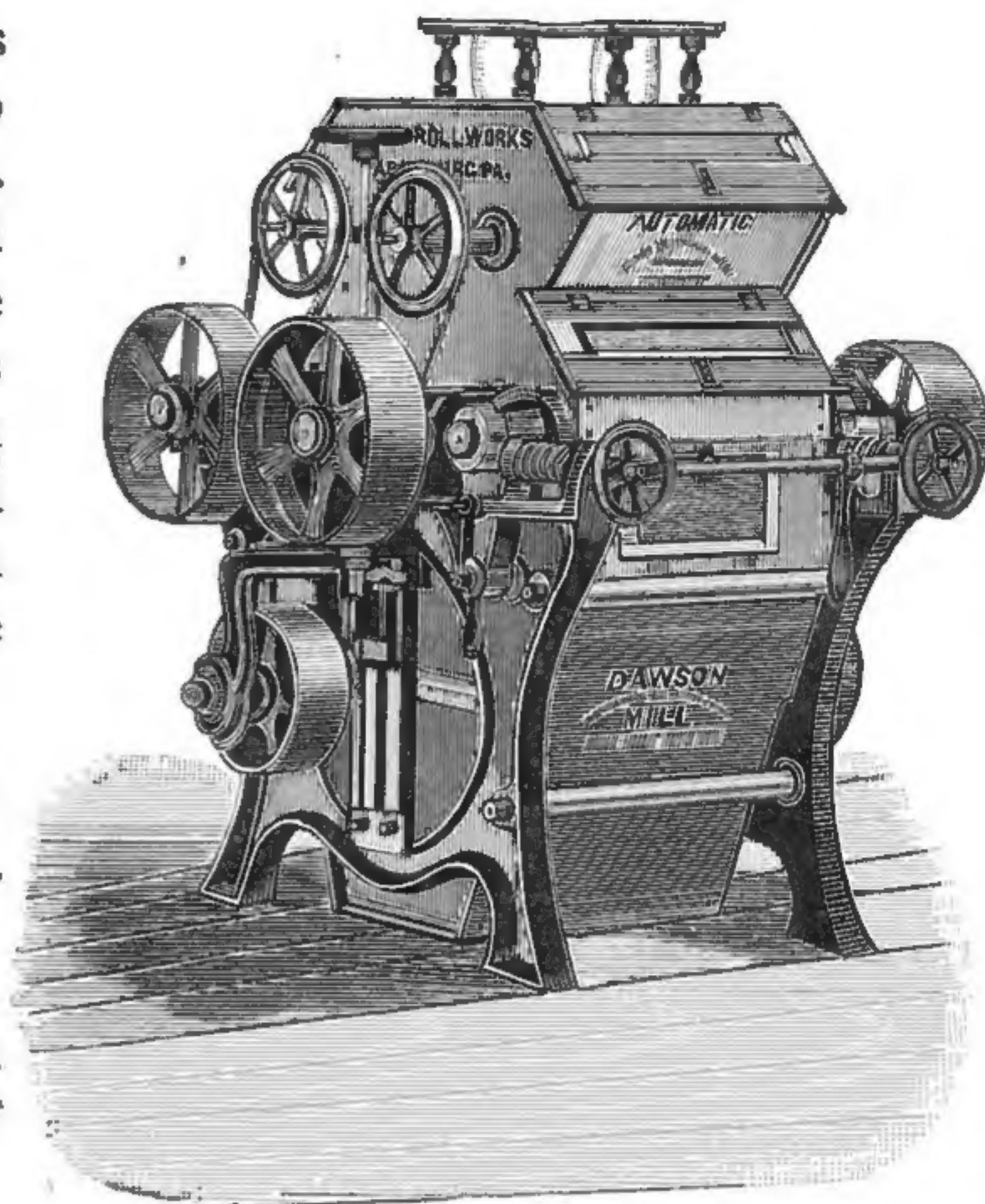
Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

We have a large plant to Re-grind and Re-Corrugate Rolls.

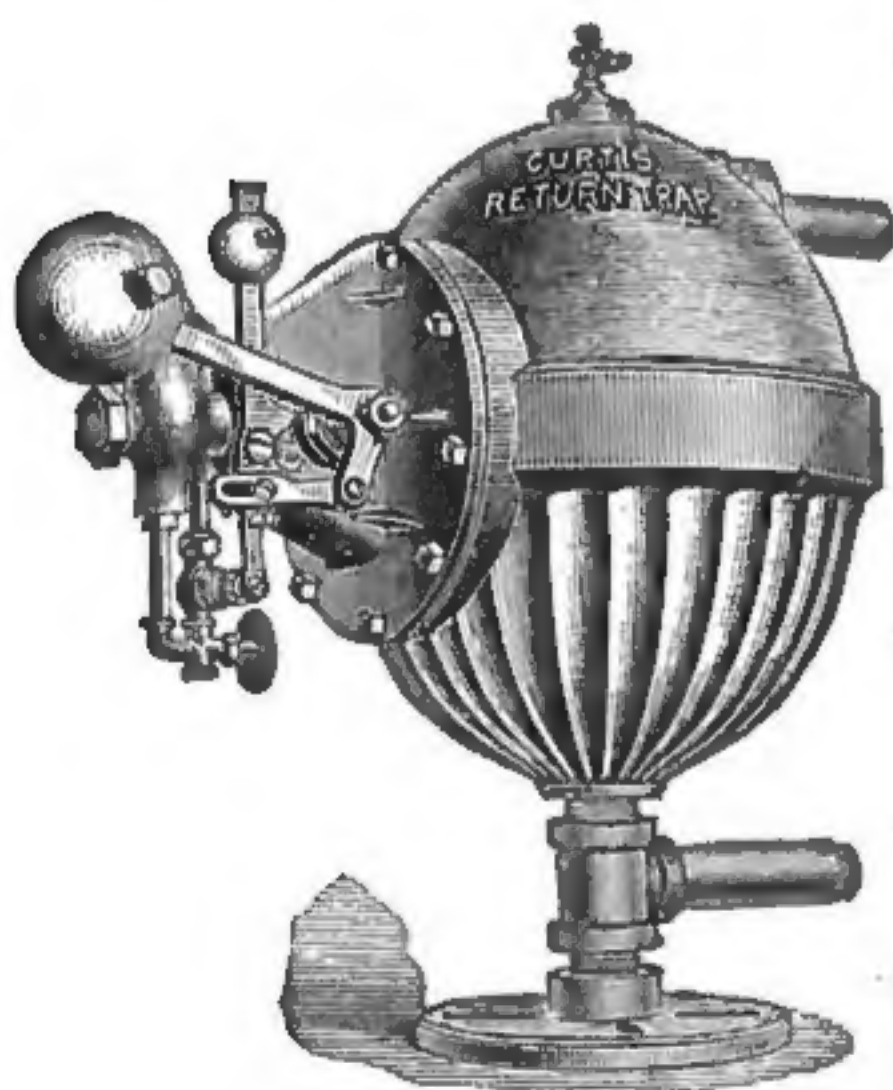
Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.



FOR PRICE LISTS AND CIRCULARS, ADDRESS,

Dawson Roll Works, Harrisburg, Pa.



THE CURTIS PATENT RETURN STEAM TRAP.

It is noiseless, positive, rapid, will return all condensation back into the boiler, and works equally well in connection with reduced pressure or exhaust steam, also when the return is below the water line of the boiler.

THE CURTIS REGULATOR COMPANY,
NO. 74 BEVERLY ST., BOSTON, MASS.

GENERAL AGENCIES.

New York, 109 Liberty st. Minneapolis, 210 S. Third st.
Philadelphia, 2085 N. Front st. Chicago, 218 Lake st.

* **THE INK** *
WITH WHICH THIS PAPER IS PRINTED
IS MADE BY THE
QUEEN CITY PRINTING INK CO.
CINCINNATI, O.

WHEN WRITING TO ADVERTISERS
PLEASE MENTION "THE
MILLING WORLD."

The Canton Cabinet Filing Case Company, Canton, Ohio.

MANUFACTURERS OF

The New Buckeye Document Case & Letter File; Also All Kinds Office Furniture

NO. 8 Represents one side of one of our Revolving Cabinet Letter Files and Document Cases Combined. It contains 30 Document Drawers and 8 Letter File Drawers. In filing letters we use first VOWEL of name on front of drawer, and LETTER FOLLOWING first VOWEL on Index Sheet within drawer. We also make more exhaustive systems which contain from 6 to 100 or more Filing Drawers.

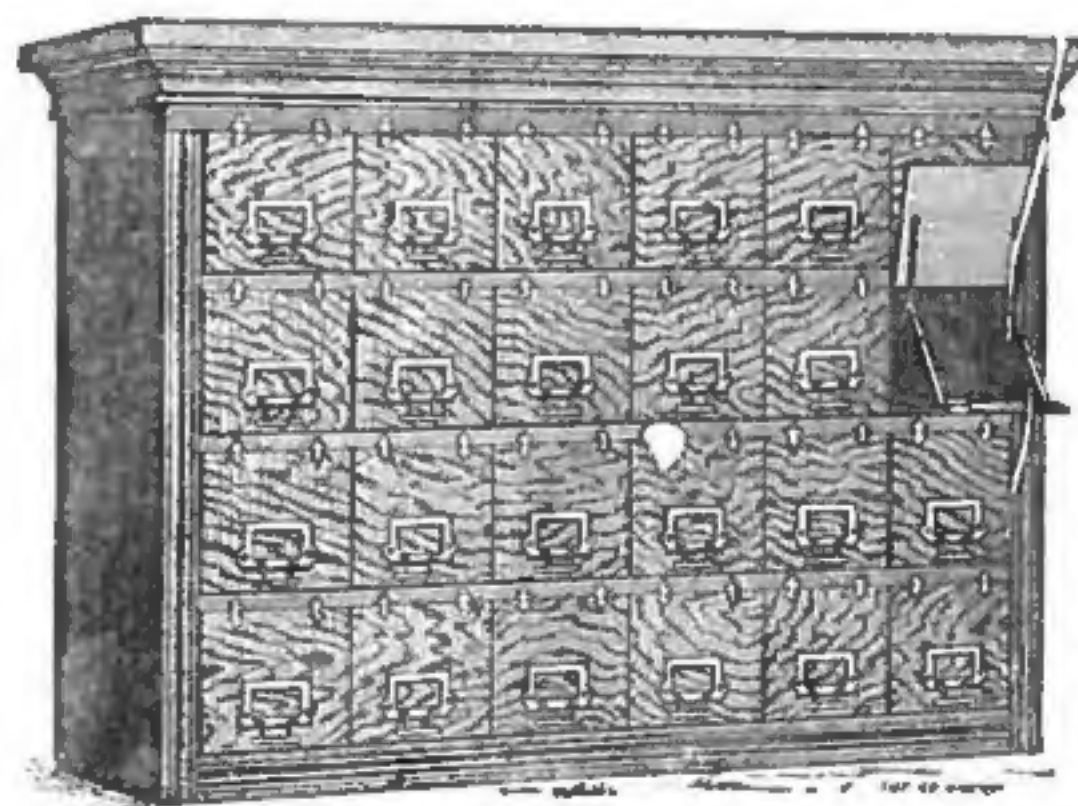
NO. 1 Represents one of our small Document Cabinets, for use on desks or brackets. Action of drawer can be seen in the cut. When front is raised inner drawer comes forward, exposing contents of drawer for inspection.

Our Cabinet Files are conceded to be the Most Convenient of Any in the Market. They are Compact, Simple, Complete, Durable and Ornamental.

SEND FOR PRICE LIST AND CATALOGUE.



NO. 8.



NO. 1.



PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,
Over Bank of Attica.

McFAUL & NOLAN, - - - PROPRIETORS.

THOMAS McFAUL.

JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in un-registered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD,
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

WANTED.

Situation wanted by a Miller of 9 years' experience, 24 years of age, of steady habits and willing to work. Address, H. care of The Milling World, Buffalo, N. Y.

WANTED.

Western New York, Ohio and Pennsylvania mills in want of a temperate miller, with 20 years experience, should write to the undersigned, who is now running a first class mill, but would like to make a change this fall. Address, W., care of THE MILLING WORLD. 56

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

FOR SALE.

Merchant and grist mill. The best water-power in Ohio. Situated five miles from Mentor, Ohio. For particulars enquire of C. S. JOHNSON, West Mentor, O. 1216

SITUATION WANTED.

As miller, by an active young man, used to rolls and stones. Strong, willing and not afraid to work. Best of references. Address "E. N.," 109 East Eagle street, Buffalo, N. Y. 811

FOR SALE.

Several good second-hand and new turbines of various styles. Second-hand price list and descriptive matter and prices of our new machines sent free. Every one interested in the shortest route to successful milling on rolls or in grinding corn and feed with the least expense of power, should address us before buying.

8tf

FLENNIKEN TURBINE CO.,
Dubuque, Iowa.

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
One No. 2 Purifier. New. Best make. A bargain.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

M-I-L-L-E-R-S

Wanting Bolting Cloths should write for discounts on same before purchasing elsewhere to

SAMUEL CAREY
17 Broadway New York.

FOR RENT.

Clinton Mills, at Black Rock, Buffalo, for rent on reasonable terms, recently repaired and put in good order. Apply to CHAS. DANIELS, over 311 Main Street, Buffalo, N. Y. 6tf

FOR SALE.

Full roller mill, 100-hp. steam power; also, a water power buhr mill, dwelling and ten acres of land. Prices low on either and terms easy. Address, J. R. ENGLISH, Piketon, Ohio. 10

WANTED.

A miller who can purchase an interest. Business rapidly increasing. Must enlarge mill and add machinery. Only mill in this, Gray's Harbor, region. Good water-power. Address, REV. HIRAM F. WHITE, Elma, Chehalis County, Washington Territory.

ENGLISH millers are finding Russian wheat quite satisfactory for flour-making. The London "Miller" says: "Millers' favor towards Russian samples remains pronounced and apparently can not be challenged by the new red wheat of America." There is little or no doubt that, could Russia go right on growing boom crops of wheat, like those of 1888 and 1887, she would be able to hold the European importing markets against all competitors. Unfortunately for her, she can not make her seasons to order.

CERTAIN esteemed patrons of THE MILLING WORLD will please bear in mind the fact that this journal, while thoroughly independent, is not devoted to attacks on this or that business house whose practices are shady or dubious. Contributions that do not square with our ideas of justice will not be printed, unless the contributors are willing to allow their names to appear with the articles. THE MILLING WORLD feels abundantly able to give expression to its views without assistance from those who owe grudges, which they would like to pay through these columns. Correspondents will please remember this.

ONE Canadian journal states that, in consequence of the disproportionate tariffs on imported wheat grain and wheat flour, over 300,000 barrels of American flour have been imported into the Dominion during this year. The claim is made that, if the Canadian duty on a barrel of imported wheat flour were equal to, or slightly greater than, the duty on enough imported wheat to make a barrel of flour, not a single barrel of American flour would have gone into Canada where 300,000 barrels have gone. The agitation for the equalization of grain and flour duties is going on, and it is stated that strong influences in Manitoba, which have heretofore refused to take part in the agitation, will from this time onward be exerted to secure protection for the Canadian millers. The Canadian Pacific Railway is thought to have exercised, and to be exercising, a patent influence against any change in the present duties. That powerful political institution represents a vast amount of money taken from the same taxpayers whom it now proposes to oppress. Probably the demand for equalized grain and flour duties will soon become too strong to be ignored, even by the Canadian Pacific.

ABOUT this season of the year it is safe to look for the statement in the untirred dailies that "the spring-wheat crop has gone under the snow in magnificent condition, with every prospect of a good yield at the next harvest, while the winter-wheat farmers are rapidly getting the ground ready to sow their crop. Late reports seem to indicate that the spring wheat is so vigorous that the chinch-bugs will not be able to damage it to any serious extent. The exceedingly short and poor crop of 1889 has pushed up prices somewhat, but the magnificent crops in India, Russia, Germany and Austria-Hungary counteract the short American crops and tend to keep down prices. The American crop is so short that, after deducting 500,000,000 bushels for seed, 875,000,000 bushels for home consumption, and 300,000,000 bushels for use in the arts and manufactures, we shall not be able to export more than 900,000,000 bushels of wheat." Does this read strange or queer? Compare it with some of the remarkable statements made in the daily newspapers, and even in certain grain circulars that float around periodically and promiscuously.

POINTS IN MILLING.

MILLERS meet some very queer persons outside, as well as inside, their fraternity. Not long ago I went into the modest establishment of an old veteran, who had been thinking of building a new mill of moderate capacity on the modern plan. He had written to a firm of mill-builders and mill-furnishers for an estimate on the cost of such a plant as he desired to build, and when I called on him he was raging over the answer.

"Look here!" he exclaimed, without stopping to say "howdy" to me. "Look here! I sent to So & So & Co. and asked them what it would cost me to put up a mill to answer my needs. See what they send me! Here is a regular high-toned cottage mill, on paper, and, as near as I can make it out, it would cost about 20 times as much as I could clear in 50 years off the business of this neighborhood, even if the machinery would last 50 years and do good work all the time! What do they mean by sending me such a plan? Look at the ornamentation on that roof! Look at the bay-window, or whatever it may be, there! Look at the tower on the top! I wonder how much flour those ornaments, that bay-window and that tower would make in a year! The only thing the tarnal fools have left off is the park, with fountains, rows of trees, lakes and landscapes! I guess if I'm compelled to build a mill, it will be better to get the ideas of some firm that does not mistake me for an artistic millionaire miller, or that does not propose to build a small country mill so much finer than the finest residence within twenty miles!"

THE old miller was justified in his indignation. The plan sent had evidently been prepared by an artist, who had no idea that he was ridiculous in proposing to cover a modest milling outfit with a building worth four or five times that outfit. The old miller is building, but he is not putting a mill on the elegant cathedral plan sent to him.

POSSIBLY the sending out of such plans has had something to do with loading some millers with establishments costly beyond the needs or the requirements of their business. Every "man on the road" sees mills of this description, and he always hears the owners complaining about "the heavy cost of modern mills."

HERE is a field opened for mill-builders. The science of putting up a building that will answer every purpose and be handsome in appearance without entailing unnecessary expense, is a science that ought to receive a good deal more attention than it receives in many cases. Comparison of the cost of small mill buildings with the cost of dwellings of the same size, far more elaborately and generally quite as strongly built, will reveal what is meant.

THERE is no good reason why a mill should not be well proportioned, and it will really cost no more, either for material or for work, to make it handsome in appearance than to make it ugly. There is no sense or reason in planning a gingerbread toy-house, frescoed and be-trimmed out of all semblance to a mill. The flour-maker is far more concerned in the equipment and efficiency of the mill than he is in ornamental cornices, flimsy towers and other useless fancies of architects. One of the most imposing small mills I ever visited was and is the worst in work I ever saw or heard of. Some of the best and finest flour I ever saw made was made in the toughest, roughest looking old ramshackle concern that ever added picturesqueness to a landscape.

THE miller who buys the 500 bushels of inferior wheat, simply because he can save \$50 on the price asked for the 500 bushels of good wheat, will find, when he has ground and sold the cheap poor wheat, that the profit would have been greater if he had bought the dearer wheat. Every day, as I go about among millers, I become more and more convinced that one of the greatest lessons the average miller has to learn, the one he is most slow or unwilling to learn, is the plain and easy one that there is more good and high-priced

flour in a quantity of good wheat than in an equal quantity of inferior wheat. Millers are ready to admit the truth, but too many of them are willing to be tempted into buying the cheaper and poorer grades. The result is always bad.

ECONOMY is possible all along the line when good grain is used. Cleaning is easier, grading is easier, breaking is easier, purification is more nearly perfect with far less care and work, and every product of the run is worth more than were possible with inferior grain.

EVERY day I find men who need to make a special study of this particular point in their business. Some of them are unreasonable enough to blame their machines for poor work, when in reality the blame lies on the millers themselves. I have seen more than one instance in which a fine equipment of the best milling-machines made in the United States was blamed for poor product. In one such case the closest examination of the equipment failed to show where the trouble lay. There was trouble, and positive trouble, too, for the product was very bad in appearance. I decided that the machines were "all right" and then passed on to examine the grain. There the trouble was, visible at a glance. The grain was "away off" in grade, and the owner of the mill was kicking like a Kentucky mule because the machines failed to get out of that grain what nature had failed to put in it, namely, good flour.

ON suggestion the mill was treated to a dose of fine wheat, and how rapidly it made away with it! How fine was the flour turned out! The owner was astonished at the result. He really has one of the best small mills in the country to-day, about as nearly a perfect mill as could be found, but he did not know it until he learned that economy consists in buying good wheat every time in preference to poor wheat.

THAT identical mill caused a certain worthy and deserving firm considerable trouble at first. They had built the mill and equipped it in a thorough manner, and they were disgusted to learn that the owner was dissatisfied with it in every particular. Since he has turned from the evil way of buying inferior grain, there has been no trouble. The builders and furnishers knew from the start that the plant was all right. The owner has at last found out that he has a good mill, and peace reigns and will reign so long as he purchases grain that contains the percentage and quality of flour he desires to obtain.

EARLY FRENCH ROLLER MILLING.

Although French millers are to-day in the rear in roller milling, it is certain that some of the earliest attempts at using rolls in flour-making were made by Frenchmen. According to an English account, roller milling was patented in France 66 years ago by Collier, whose patent was followed by those of Garcon-Malar, Sellque, Callard, Duffey, Helfenberger, Reinhalt, Tabey and others. It is rather singular that these patents were not reduced to practice long ago. The reason is not far to seek, for French millers and bakers were not at that date ripe for the movement. Having adopted the progressive system of grinding centuries before that period, they were ahead of their rivals and therefore were content to move on in the elevated position they occupied at the International Exhibition, London, 1862. The flours of France compared favorably with those of Budapest, Hungary. Paris had then reason to be proud of her buhrs and the successful manner in which French millers handled them. But it was otherwise at the Paris Exhibition of 1889, roller milling having come to the front, especially in the separation of the bran and germ from the semolina and middlings. The following French examples come perhaps nearest to the roller milling of the present day:

Patent No. 5,774.—April 30, 1828. Vol. 49, p. 256; plate 19, first series. Patentee, Garcon-Malar. This is a roller consisting of 2 fluted-break-mills with differential movement, and 2 sets of 3 smooth rolls, also with differential movement, so arranged that each set can be made to crush once or twice,

as may be required. The hopper of the break-rolls rests so close upon the first roll that the flutes are adapted for feeding the grain to the rolls. There is a slide adjusted by a screw and winch handle for regulating the amount of the feed to the flutes of the feed-roll. On the shaft of this roll there is a large spur-wheel which gears into and drives a lesser spur-wheel on the shaft of the other (the driven roll), thus effecting the differential movement. There is a set-screw device for adjusting the bearings and proximity of the rolls for breaking coarse or fine. The broken grain or semolina is fed to the first set of smooth rolls by an endless carrier-band under the mouth of the hopper furnished with an adjustable slide for regulating the feed. On the shaft of the first driven and driving-roll in each set of 3 rolls there is a large spur-wheel which gears into lesser spur-wheels or pinions on the two driven rolls, which thus move at equal speeds. The broken grains or middlings from the upper set of rolls is fed to the lower set by a chute, the breadth of which is equal to the length of the roll. The design is simple, remarkably free from complication, and the arrow upon the rolls leaves no mistake as to their movement and the process they illustrate. The engravings are drawn to a scale and so well executed that any workman accustomed to work from drawings, as all workmen now are, could easily make the mill. Dressing machinery and apparatus are not included in the patent, and therefore are not illustrated in the drawings or described in the text, the title being "Pour un Moulin a Cylinder."

No. 3,845.—Dec. 31, 1833. Vol. 38, page 324, plate 21. Mr. Alexandre Francois Sellque, of Paris. There are two engravings, the one a sectional end view, and the other a side view of the mill in elevation; and besides these there are four small engravings showing the mode of dressing the rolls and fixed breasts for grinding. The driving-gear is strap-and-pulley throughout. The rolls are arranged in two sets, as it were, the first shafting carrying loose and fast pulleys, driven by any prime mover. A belt, not shown on the engraving, from a fast pulley on the first shaft, drives a main pulley on the upper shaft, the spindle of which is prolonged from a pulley that drives the feed-roll above by means of a strap. There is a cup elevator to the bolting and dressing machines above, the latter not being shown.

No. 4,063.—Nov. 22, 1834. Vol. 40, page 57, plate 7. Jean Michel Reinhardt, of Strasbourg. This is either a hand roller-mill operated by two winch handles, or a power machine, the power being applied by a fast and loose pulley shown on the main driving-shaft. The patent is a comprehensive one, there being 13 quarto pages of letter-press and 2 engravings. Spur-gear is used for driving throughout. There is a clever device for adjusting the distance between the break and crushing rolls without sacrificing the pitch-lines of the gearing, which thus works truthfully, whether grinding coarse or fine. Three rolls work against the face of one single roll, with means for throwing any one of them wholly out of gear, so that the mill can grind once, or oftener, at the pleasure of the miller.

No. 2,320.—June 3, 1823. John Collier, Paris. This is a small mill, consisting of two grooved rolls driven by a winch handle on a fly-wheel. The rolls are adjusted and held to work by a weighted lever, and the product from them passes over two sieves operated by cams on the driving-wheel attached to the fly-wheel.

Laboulaye in his "Dictionary of Arts" gives, under the article "Moulin-a-ble," an extensive illustrated description of milling machinery in use at the date of the work (1852). It embraces a combination of cleaning and sorting machines for cleaning and dressing the wheat, two pairs of millstones for reducing the wheat to semolina, and a fan for the removal of the light bran and dust from the first and second breaks. The product from the fan is elevated to a vertical set of three pairs of rollers, the first pair feeding the second pair, and the second pair feeding the third, means not being shown or described for the removal of the break-flour. The products from the rollers go to the dressing-reels. The several products are given in tabular form and are in accordance with the gradual-reduction system of milling.

In 1857 a French inventor applied for an English patent, No. 1,866. The specification was imperfectly drawn up, owing to the English patent agent not understanding his French clients. Hence the project was not carried out. The provisional specification shows on the face of it that the inventor had made valuable improvements. Instead of quoting from the provisional specification, we shall give what appears to be the gist of the invention. Like some of its French predecessors the flutes of the break-rolls are so adjusted to the hopper that they feed the rolls. The break-rolls separate the bran, including the germ, from the broken kernel, and from the latter the bran is removed by a fan. The product passes on to inclined oscillating sieves, which separate the break-flour and other impurities. The clean semolina now passes to the crushing-rolls, which reduce it to meal. As two sieves are specified, there are probably two or three pairs of crushing rolls, so that the product from the first pair would go to the second sieve, which would remove the break-flour from the middlings, the latter going to the second pair of crushing rolls.

It follows that this invention is an improvement on that given by Laboulaye (1852). The improvements consist (1) of using break-rolls instead of millstones for the first break, and (2) in separating the break-flours from the first and second pair of rolls by means of sieves. By this date (1857) the inventors and milling engineers of France were familiar with the Sulzberger rolling-mills of Switzerland, so that it is not likely they would patent anything inferior. The opposite of this is obviously the course they would naturally follow. And what is more, any number of sieves is specified, and likewise also there may be two or three pairs of crushing rolls.

THE BUFFALO ELEVATOR SHORTAGES.

The Lake Superior Elevator Company has issued the following circular in regard to the reported wheat shortages at Buffalo, giving the result of the recent tests there under the observation of representatives from Duluth, addressed to commercial bodies and associations interested:

"In view of the fact that many heavy shortages have occurred at Buffalo in cargoes loaded at our elevators, and that the blame for these has been laid upon us, we deem it proper to make the following statement: At our suggestion the Railroad and Warehouse Commissioners of the State of Minnesota selected L. D. Berry, a well-known and competent scale expert, and we selected J. W. Miller, also a scale expert and experienced tallyman, well known in marine circles, and these two gentlemen went to Buffalo to investigate the cause of these shortages after having made a thorough examination here and found nothing wrong. Arriving at Buffalo October 29, they proceeded to examine the scales. They found the scales in the Niagara A and Wheeler elevators correct, the Niagara B and Dakota badly out, and the Bennett and Erie so badly out that weighing on them was merely guess-work. Further tests were not made on account of the elevator dust injuring the health of Junius S. Smith, the Merchants' Exchange Weighmaster. Since these tests were made and the scales corrected and adjusted, our shortages have ceased, and cargoes are running satisfactorily. Some of the shortages caused by these defective scales have been settled by the Buffalo elevators. Without desiring to enter into any long or wordy controversy, we respectfully submit that the above results clearly show that the wrong has been in Buffalo, and we recommend to you, individually and as an association, a thorough investigation of the system of weighing practiced at that port, and an insistence upon such changes as will prevent the repetition of such shortages as you have suffered for some time."

Commenting on this circular the Buffalo "News" of December 2 says: In a circular from the Duluth elevator people the charge is made that certain scales in different elevators were badly out of order and weighing on some of them was mere guess work. The Bennett elevator was named among the number. Yet the Bennett people say that no complaint whatever has been made by vessel captains about the weighing done at that elevator. S. S. Brown, one of the owners

of the elevator, said to a reporter this morning that the Duluth circular was a scandal got up for the benefit of the Western city elevator owners. Mr. Brown didn't believe that the scales were out of order. They were under the supervision of Junius Smith, the official Weighmaster of the Merchants' Exchange, and whenever any weighing of a cargo was done it was in charge of one of Mr. Smith's men. Mr. Brown thought it was quite likely some unintentional mistakes had been made. Weighing is a difficult work, but he was positive that there had been no stealing done by any of the Buffalo elevators. He referred the reporter to R. M. Cannon, the manager of that elevator. Mr. Cannon states that the largest shortage at the elevator this season was that of the cargo of the propeller Missoula. It was into the second hundred. The vessel used the Bennett's new leg for the first time, so a mistake was impossible, for the new scale had just been tested.

Leonard Dodge, superintendent of the Frontier Elevator, was asked what he thought of the Duluth accusation. "That is a scare got up by those fellows in Duluth. Why, one time last season at our elevator we ran 1,500 bushels over on a Chicago cargo. I told my men that a mistake had probably been made. We examined the warehouse receipts and re-weighed the grain. The scales were all right and exactly 1,500 bushels over were weighed. The vessel captain, of course, pocketed the difference. Our scales are all right. They are in charge of Mr. Smith and are tested regularly. It is impossible that those mistakes in weighing could be made.

Manager Sowerby of the Niagara elevators knew that the scales of his elevators were correct and no shortages occurred at those elevators. There have been no complaints all the season that vessels were short from any of the other ports. Duluth cargoes came down 500 bushels or more with terrible regularity. The circular asserts that the shortages ceased after the scales had been fixed, yet the Missoula was short only last week.

Weighmaster Junius S. Smith, of the Buffalo Merchants' Exchange, has addressed to that body the following statement on the subject: "Gentlemen: A circular dated Duluth, Minn., November 26, 1889, signed by George Rupley, superintendent Lake Superior Elevator Company, says that two men were sent here to investigate the cause of shortages on grain from Duluth. 'After having made a thorough examination here and found nothing wrong, they found the scales in the Niagara A and Wheeler elevators correct, the Niagara B and Dakota badly out, and the Bennett and Erie so badly out that weighing on them was merely guess-work.' Let us see about these matters. The scales of Niagara B were tested October 23d and put in order in my presence by a representative of Fairbanks and Co. On the 28th a cargo was taken out and was short 67 bushels, and on the 29th a test was made with Duluth representatives, the difference was found, and the vessel received credit for the full amount; but this does not account for any difference prior to the 23d, five days at the most. Niagara A scales were correct, and the Wheeler scales were slightly to the advantage of vessels. At the Dakota a test was made with 4,000 pounds of weights only, because they were not working properly, and these gentlemen did not care to go further with it in that condition; but the scales weighed the 4,000 pounds correctly, and after putting the scales in prime working order the first cargo taken out was from Duluth and short 109 bushels.

"The Bennett scales were 'out' and were not in proper working condition, but as up to that time I had only had one Duluth cargo at that house, and that was not badly short, the only other being a craft which I did not have, this does not, to any great extent, affect the general result. The Erie scales, so far from being 'so badly out that weighing on them was merely guess-work,' were two pounds in favor of the vessel on a test of 12,000 pounds. They were a little stiff, but would and did weigh correctly. With a record of about ten pounds per 1,000 bushels such 'guess-work' is most excellent. When the Watson was suggested, the house had a large cargo which must not be delayed, and I was just then in such condition that a test in the dust would involve great

danger, but the test could be made later without my presence. Here, again, I had only had one Duluth craft, with one other which I did not have. I have made more than 170 tests of scales this season, with rare exceptions of using standard weights to the full capacity of the scales, showing at once the total variation, if any, and the tests are repeated when my record indicates the need. I have often found scales more or less out of order, like any other mechanism, not only in Buffalo, but in Toledo, Chicago, Milwaukee, Green Bay and elsewhere, some of them quite seriously so; but, if I should test scales of 30,000 pounds capacity with 2,000 pounds of weights, would it be well to say, 'Made a thorough examination and found nothing wrong.'

"So much for scale work. Now for some facts in connection with Duluth shortages, for this is not a matter of a few days or of occasional scale differences. My record for 1888 showed an average shortage of about 8 pounds per 1,000 bushels, but from this one house in Duluth the average was 82 pounds, and on cargoes loaded partly at that house 66 pounds was the average, and on cargoes wholly or in part from there and not on my record the average was 79 pounds per 1,000 bushels. For 1889 up to October 8th, my record showed an average of 81 pounds per 1,000 bushels on cargoes wholly or in part from that house; while from the other Duluth house, including West Superior, no part being taken from this house, my average was only 10 pounds per 1,000 bushels, and on craft not on my record the figures were 148 pounds in the one case and 48 pounds in the other. If the trouble was in Buffalo, and I do not claim that the work is perfect here or that no errors or mishaps occur, it had a most singular method of showing itself usually on craft from that one place, extending through at least two seasons, on craft which I had and on those I did not have, and at various elevators here as directed by consignees."

SPECIMEN FREE TRADE ROT.

One of the most astonishing pieces of rot ever penned, even by an American free-trade fanatic, is the following article contributed to the "Popular Science Monthly" by one George M. Wallace. Speaking of steel rails and duty, he branches out as follows: "Now note, the business man by government partiality gets \$37 per ton where otherwise, or in the markets of the world, he could get only \$20. He has a rise in price on steel rails of \$17 per ton. The young girl has worked a day and got \$1. She wants 10 yards of calico and goes to a store and gets it at 10 cents a yard, and pays the dollar her day had produced. The storekeeper would have charged only 9 cents a yard but for extra freight he had to pay; the railroad charged extra freight because of the increased cost of its steel rails. In other words, when, by government interference on behalf of the business man, the price of steel rails was carried from \$20 to \$37 per ton, the railroad got it back by increased freights and the merchant by increased prices. The young girl got it back from nowhere; her 10 cents were passed over to the merchant, who passed it over to the railroad, which passed it over to the business man. Government, which can produce nothing, has wrought a different distribution of wealth; the business man gets all he earns as before, but also gets one-tenth of the earnings of the young girl. Government is no longer just, because no longer impartial; the girl is no longer free, because not permitted to enjoy in full the fruits of her own labor."

Now, what are the cool business facts and figures in the case? 1. Steel rails in the United States are not worth \$37 per ton. They have ranged in the past month as high as \$32 for actual sales, and \$35 is the highest quotation in 1889, and that was a purely nominal quotation. 2. There is no market selling steel rails for \$20 a ton. The English quotations in early December were quite as high as the American quotations. The London, England, "Iron and Steel Trades Journal," in its market review at the close of November, said: "Steel rails are firm at £6 15s. for heavy sections, and we hear that the amount of work on order is increasing at all the works. There does not seem much prospect of a demand from the United States, as the makers there have been sold heavily at a price equal to £6 13s. 4d., and the highest

prices now quoted are lower than would be the cost of English rails c.i.f. at Atlantic ports." These figures are equivalent to \$32.81 a ton in England, where rails are not dutied, and \$32.40 in the United States, where they are dutied. If Mr. Wallace can convince any intelligent man that the duty is actually added to the price, the cost of steel rails in the United States should be the sum of \$32.81, the English free-trade price, and \$17, the American duty, or \$49.81, while rails are actually sold here at \$32 a ton! 3. The cost of American railroads averages less than the cost of British railroads. The capitalization of American roads is \$60,000 per mile, while of British roads it is \$204,000 per mile. Free-trade rails have not enabled British roads to compete with the dutied-rail lines of the United States, British rates for both freight and passengers being notoriously higher than those of American roads. 4. Calico is not 10 cents a yard in this country. It is even cheaper here than in free-trade Great Britain, as the market reports of New York and London prove. 5. The \$17 duty per ton has been paid back to the working girl and others, who patronize railroads, a thousand times over in the saving effected by buying steel rails, under protection, for \$25 to \$35 a ton, which, under free trade, cost this country from \$120 to \$160 a ton bought abroad. 6. The working girl earns from three to seven times more, and her living and clothing cost her a quarter to a third less, in this protectionist country than in free-trade Great Britain.

Writers like this Mr. George M. Wallace would do infinite mischief if they possessed the ingenuity that would enable them to make their falsehoods plausible. They ramble on in sublime ignorance of the fact that every theory they advance, every conclusion they reach, every supposititious figure they use and every assertion they make is confuted, rendered absurd or totally overthrown by the market figures and the conditions of labor that are perfectly well known to all intelligent men. When one reads a squib like the one quoted from Mr. Wallace's pen, he is at a loss whether to classify such a writer as a willful liar, whose absurd palaver carries its own refutation with it, or as an ignorant driveler, whose supreme ignorance of the details of the subject he is handling makes him a fit subject for amused contempt.

AMERICAN FLOUR PRICES ABROAD.

British prices of American flour, in comparison with the prices of German and Hungarian flours, may be seen in the reports of Messrs. R. Hunter Craig and Co., large importers. Their Glasgow report of November 15 showed that American patents were selling at the following prices per barrel: Canadian, Michigan and Ohio \$5.20; Milwaukee \$4.96; Minneapolis \$5.39; St. Louis \$5.29; Kansas \$5.40, and California \$5.04. German first and second qualities were selling at \$4.62 and \$4.03 respectively. Hungarian flours Nos. 0, 1, 2, 3, 4, 5 and 6 were selling at \$5.78, \$5.58, \$5.43, \$5.40, \$5.04, \$4.70 and \$4.21 respectively.

Their Liverpool report of the same date gave the prices per barrel in that market as follows: Canadian and Ohio \$5.13; Michigan, Illinois and St. Louis \$5.21; Kansas (hard) \$5.29; Milwaukee \$4.66; Minneapolis \$5.38, and California \$4.88. German first and second qualities were selling at \$4.61 and \$4. Hungarian flours Nos. 0, 1, 2, 3, 4 and 5 were selling at \$5.80, \$5.64, \$5.45, \$5.29, \$5.04 and \$4.70 respectively.

On the same date the prices per barrel in London were as follows: Canadian and Ohio \$5.12; Michigan and St. Louis \$5.21; Milwaukee and California \$4.84; Minneapolis \$5.38. Australian was selling at \$4.70; Russian patents at \$5.21. German first and second quality at \$4.70 and \$4.21 respectively. Hungarian flours Nos. 0, 1, 2, 3 and 4 were selling at \$5.78, \$5.63, \$5.47, \$5.29 and \$5.12 with slow demand.

CORN FOOD IN GREAT BRITAIN.

It was the United States which gave Englishmen and Irishmen their first taste of corn food in 1846, during the great Irish famine. Several shiploads of it were sent to Ireland from New York to be distributed free of charge.

Then the British Government ordered \$500,000 worth of it. When corn-meal was first projected upon the Irish and English horizon, there was a terrible prejudice against it. The story got abroad that any person who ate it would at once turn black. It was sneered at as "yellow meal," "Peel's brimstone" and a variety of other appellations. The government had to land the cargoes of corn from this country secretly through fear of a mob. The only way the people could be induced to eat it was through the example set by several priests, who proceeded to eat corn cakes and mush exclusively and grew fat on the healthful diet. The people were finally coaxed to eat it, and they liked it. Thousands of Irishmen had never eaten any thing but potatoes, which have not, as an exclusive diet, the strengthening qualities of corn-meal, and the change of diet had a very good physical effect upon them. In Dublin in 1846 a big gold medal was awarded to a baker, a Mr. O'Brien, for the attention he gave to introducing cheap, popular methods of preparing corn-meal for eating, and the government issued thousands of pamphlets giving instructions how to cook the food. In 1847 the taste for Indian corn had taken root in Ireland, and that food carried the people through the famine. Hundreds of vessels brought cargoes of it to sell in Ireland, and the market was soon glutted, and corn fell from \$90 a ton to \$70. Englishmen never have fancied corn-meal preparations, and most of them turn up their noses at the most delicate and appetizing forms of that food.

ACCORDING to the last postal advices from Odessa, Russia, holders are very tenacious and apparently confident of better prices in the future, owing to their short harvests this year, they were consequently warehousing their wheat, so that stocks were increasing and probably amounted to nearly 1,000,000 quarters against 1,600,000 quarters at this time last year, the fresh supplies being fair.

J. B. Carter and others, Breckenridge, Tex., organized the Grove Alliance Gin and Mill Co., to build a grist-mill.

CATARRH.

CATARRHAL DEAFNESS—HAY FEVER.
A NEW HOME TREATMENT.

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 337 and 339 West King street, Toronto, Canada.—*Christian Advocate*.

Sufferers from Catarrhal troubles should carefully read the above.

SPECIAL NOTICES.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.

Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

TOLEDO MILL PICKS AND STONE TOOL MFG. CO.

Manufacturer

and Dresser of

MILL PICKS.

Made of the best double-refined English cast steel. All work guaranteed. For terms and warranty, address, GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, Ohio. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

Shafting, Pulleys, Hangers, Coupling, Machine and Jobbing, Etc., Etc.



ANOTHER APPLICATION OF THE ELECTRIC CURRENT.—An American electrician has devised a method of expanding hoops and wheel tires by heating them with the electric current. It is claimed for the new process that the heat is more uniformly distributed than with gas furnaces or piles of embers. The current is brought by wires connected to opposite points on the tire and divides equally through each half of the ring.

GENERAL NOTES.

CAPTAIN Ledyard Ellsworth, of Hartford, Ct., is the inventor of the smokeless, noiseless powder, for the right to make and use which the German government pays \$500,000 and \$10,000 yearly for 99 years.

THE Illinois State Grange offered \$10,000 for a device to bind grain with straw. Out of 40 competitors one was awarded the prize, but he declines it, having received larger offers for his machine and patents.

COTEMPORARY COMMENT.

Great cities bring their burdens and perils. In them vice festers and poverty abounds, but, nevertheless, they are the focal points of the energies working for the advancement of mankind, and where they flourish and multiply progress is sure to center.—*Philadelphia "Anti-Adulteration Journal."*

It must be admitted by all that the rate of insurance on elevators and their contents is entirely too high. This fact has been recognized at Toledo, and the annual rate of fire insurance on all elevator buildings in that city and the rate on grain have been reduced to 25 cents. The rate is too high everywhere, and elevator and grain men should demand that it be reduced.—*Chicago "American Elevator."*

Millers' associations have been damned for various sins of omission, but perhaps the principal cause of deterioration is due to the fact that many of them are turned into arenas for the contention of drummers and agents for various milling-machines. This is not always true, but it is true too often, that these drummers and agents, with their glibness and aplomb, monopolize the talk and make all the suggestions, while the millers are left on the side of the wall doing the useful work of listening.—*Indianapolis "Millstone."*

With the exception of Michigan, the winter wheat crop in the West is looking very favorably and generally regarded in good condition. * * * And now it is claimed that the party who was reported "squeezed" in the corn market was the party who actually engineered the "squeeze."—*Chicago "Daily Trade Bulletin."*

When Mediterranean wheat was first introduced into Western New York it had a long, dark berry, looking more like rye than wheat. By growing it a few years on upland gravelly or sandy soils it has become so changed that those

who knew the original could hardly believe the new wheat originated from it. There is undoubtedly a tendency to improved quality in many kinds of plants when grown in localities naturally adapted to them, and a tendency to run out when the locality is unfavorable.—*New York "Produce Exchange Reporter."*

The inland marine, representing an aggregate capital of \$53,000,000, has carried during the season now at its close 102,000,000 bushels of grain from Chicago, 10,000,000 bushels from Duluth, 6,700,000 tons of iron ore from the Lake Superior mines to the blast-furnaces, and brought back 2,200,000 tons of coal from Buffalo and 2,000,000 tons from Ohio ports. It has brought into Chicago 450,000 tons of general merchandise valued at \$50,000,000, and carried away 525,000 tons valued at \$10,500,000. These figures, vast as they are, represent only the business of the inland marine between Lake Erie and Lakes Michigan and Superior. The great lumber trade and the local trade of the five great lakes, each representing a traffic of many million dollars, are not included.—*Chicago "Daily Business."*

MILLING PATENTS.

Among the patents granted December 3, 1889, are the following:

James F. Winchell, Springfield, O., No. 416,204, a crushing and grinding mill, assigned to the Foos Manufacturing Co., same place.

Charles R. Curtis, Fairland, Mich., No. 416,213, a flour-chest.

Morris Lary, New York, N. Y., No. 416,228, a sieve for flour and similar substances.

Jos. W. Roberts, Rogers, Ark., No. 416,301, an elevator.

Wm. W. Ingraham, Chicago, Ill., No. 416,335, an apparatus for clipping oats.

Ambroise Millot, Zurich, Switzerland, No. 416,371, a grinding mill.

Chas. W. Sampson, Danville, Va., No. 614,378, an adjustable measure.

Michael N. Laufenburg, Stockton, Cal., No. 416,464, a grain separator and cleaner.

Ben. F. Warner, Homer, Mich., No. 416,525, a grain meter.

James F. Winchell, Springfield, O., No. 416,533, a crushing and grinding mill, assigned to the Foos Mfg. Co., same place.

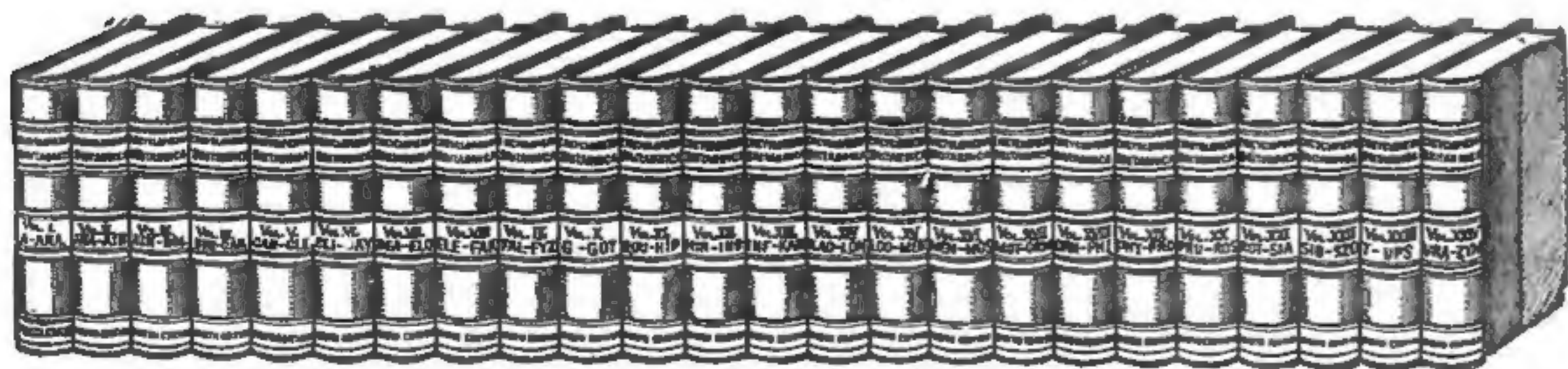
A NEW METHOD OF TREATING DISEASE.

HOSPITAL REMEDIES.

What are they? There is a new departure in the treatment of disease. It consists in the collection of the specifics used by noted specialists of Europe and America, and bringing them within the reach of all. For instance the treatment pursued by special physicians who treat indigestion, stomach and liver troubles only, was obtained and prepared. The treatment of other physicians, celebrated for curing catarrh was procured, and so on till these incomparable cures now include disease of the lungs, kidneys, female weakness, rheumatism and nervous debility.

This new method of "one remedy for one disease" must appeal to the common sense of all sufferers, many of whom have experienced the ill effects, and thoroughly realize the absurdity of the claims of Patent Medicines which are guaranteed to cure every ill out of a single bottle, and the use of which, as statistics prove, has ruined more stomachs than alcohol. A circular describing these new remedies is sent free on receipt of stamp to pay postage by Hospital Remedy Company, Toronto, Canada, sole proprietors.

A LITERARY MARVEL.—\$2.50 PER VOLUME.



We publish the Popular Reprint of the **ENCYCLOPÆDIA BRITANNICA** from latest English edition, at \$2.50 per volume, being one-third the price of the original and one-half the price of the Scribner edition of the same work. We have reproduced all illustrations, maps and texts, page for page and volume for volume. Complete sets of 24 vols. now ready for delivery on EASY PAYMENTS. The greatest work of the kind in the English language. A subscriber writes: "The best is now the cheapest." All high priced editions of this work are in our office for comparison. Circulars and sample pages mailed. Agents wanted.

THE HENRY G. ALLEN COMPANY,

739 & 741 Broadway, New York; & 126 Washington St., Chicago.

L. L. WHITLOCK,

Advertising Agent

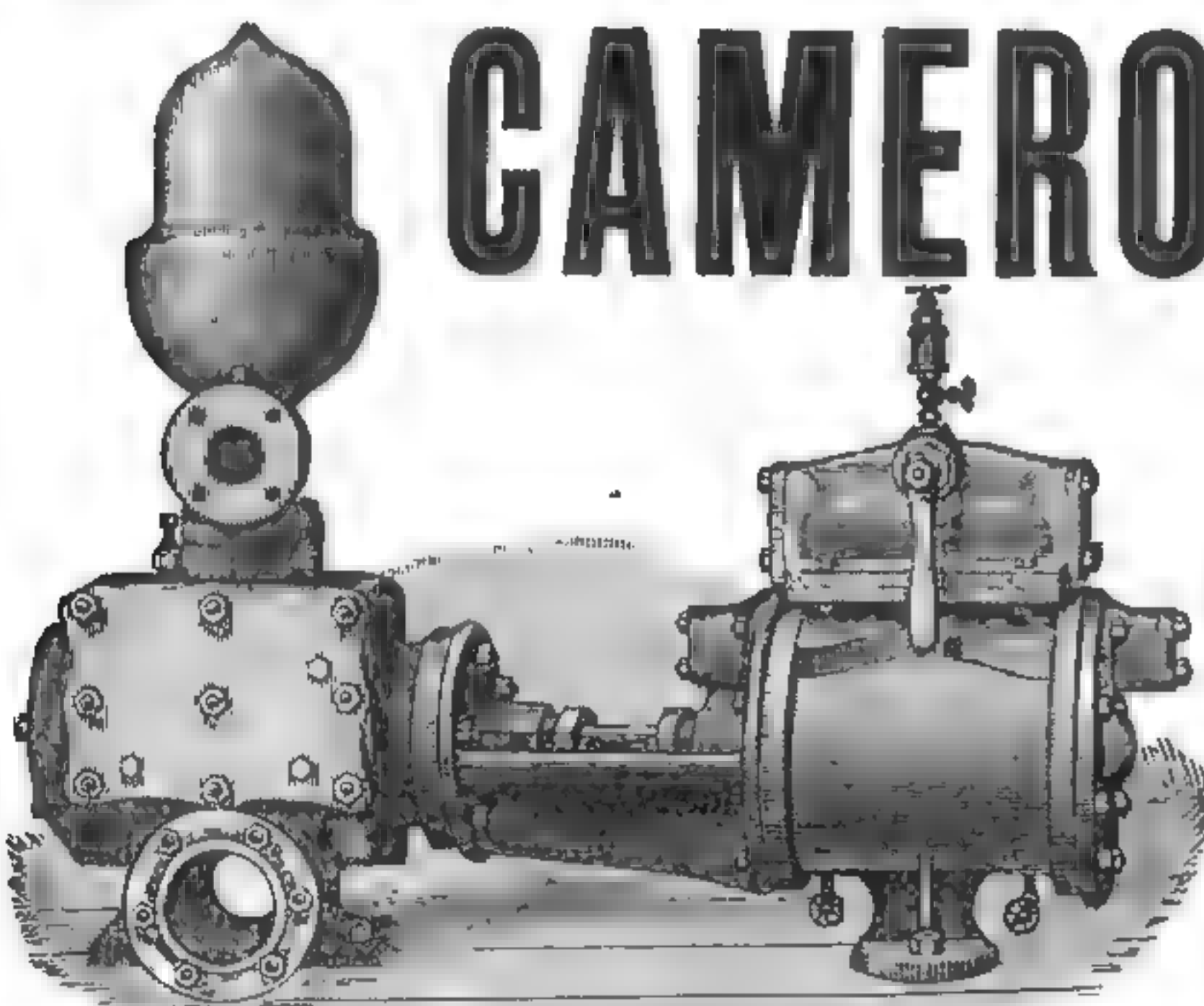
FOR MANUFACTURERS.

TRADE JOURNALS A SPECIALTY.

P. O. DRAWER 5323. Boston, Mass.

As Agent for Advertisers instead of Papers, I obtain the Best Rates Possible for my Customers.

<p>COMPOUND Condensing or Non-Condensing. 16 SIZES, 5 to 500 H. P. Not yet equaled by any form of Engine for HIGH FUEL DUTY AND SIMPLICITY.</p> <p>STANDARD 13 Sizes in Stock. 5 to 250 H. P. 3000 in use in all parts of the Civilized World.</p> <p>JUNIOR 6 Sizes in Stock, 5 to 50 H. P. An Automatic Engine cheaper than a Slide Valve. WELL BUILT. ECONOMICAL. RELIABLE. Over 300 Sold the First Year.</p> <p>All the above built strictly to Gauge with INTERCHANGEABLE PARTS. REPAIRS CARRIED IN STOCK. SEND FOR ILLUSTRATED CATALOGUES.</p>	<p>WESTINGHOUSE ENGINES The Westinghouse Machine Co. PITTSBURGH, PA. U.S.A.</p>	<p>SELLING DEPARTMENT IN THE UNITED STATES.</p> <table border="0"> <tr> <td>New York,</td> <td>47 Cortlandt St.</td> <td rowspan="3">Westinghouse, Church, Kerr & Co.</td> </tr> <tr> <td>Boston,</td> <td>Mathway Building,</td> </tr> <tr> <td>Pittsburgh,</td> <td>Westinghouse Build'g.</td> </tr> <tr> <td>Chicago,</td> <td>156, 158 Lake St.</td> <td></td> </tr> <tr> <td>Philadelphia,</td> <td>608 Chestnut St. M. R. Muckle, Jr. & Co.</td> <td></td> </tr> <tr> <td>St. Louis,</td> <td>302, 304 Washington Av.</td> <td rowspan="3">Fairbanks & Co.</td> </tr> <tr> <td>Kansas City,</td> <td>312 Union Avenue,</td> </tr> <tr> <td>Denver,</td> <td>1330 Seventeenth St.</td> </tr> <tr> <td>Omaha,</td> <td>1619 Capitol Avenue, P. C. Ayer.</td> <td></td> </tr> <tr> <td>Pine Bluffs, Ark.</td> <td></td> <td>Geo. M. Dilley & Sons.</td> </tr> <tr> <td>Salt Lake City,</td> <td>239 S. Main St.</td> <td rowspan="2">Utah & Montana Machinery Co.</td> </tr> <tr> <td>Butte, Mont.</td> <td>4. Granite St.</td> </tr> <tr> <td>San Francisco,</td> <td>21, 23 Fremont Street,</td> <td>Parke & Lacy Co.</td> </tr> <tr> <td>Portland, Or.</td> <td>33, 35 N. Front St.</td> <td>Parke & Lacy Mch. Co.</td> </tr> <tr> <td>Charlotte, N. C.</td> <td>36 College St.</td> <td rowspan="2">The D. A. Tompkins Co.</td> </tr> <tr> <td>Atlanta, Ga.</td> <td>45 S. Prior St.</td> </tr> <tr> <td>Dallas, Tex.</td> <td></td> <td>Keating Imp. & Machine Co.</td> </tr> <tr> <td>Chattanooga, Tenn.,</td> <td></td> <td>G. E. James & Co.</td> </tr> </table>	New York,	47 Cortlandt St.	Westinghouse, Church, Kerr & Co.	Boston,	Mathway Building,	Pittsburgh,	Westinghouse Build'g.	Chicago,	156, 158 Lake St.		Philadelphia,	608 Chestnut St. M. R. Muckle, Jr. & Co.		St. Louis,	302, 304 Washington Av.	Fairbanks & Co.	Kansas City,	312 Union Avenue,	Denver,	1330 Seventeenth St.	Omaha,	1619 Capitol Avenue, P. C. Ayer.		Pine Bluffs, Ark.		Geo. M. Dilley & Sons.	Salt Lake City,	239 S. Main St.	Utah & Montana Machinery Co.	Butte, Mont.	4. Granite St.	San Francisco,	21, 23 Fremont Street,	Parke & Lacy Co.	Portland, Or.	33, 35 N. Front St.	Parke & Lacy Mch. Co.	Charlotte, N. C.	36 College St.	The D. A. Tompkins Co.	Atlanta, Ga.	45 S. Prior St.	Dallas, Tex.		Keating Imp. & Machine Co.	Chattanooga, Tenn.,		G. E. James & Co.
New York,	47 Cortlandt St.	Westinghouse, Church, Kerr & Co.																																																
Boston,	Mathway Building,																																																	
Pittsburgh,	Westinghouse Build'g.																																																	
Chicago,	156, 158 Lake St.																																																	
Philadelphia,	608 Chestnut St. M. R. Muckle, Jr. & Co.																																																	
St. Louis,	302, 304 Washington Av.	Fairbanks & Co.																																																
Kansas City,	312 Union Avenue,																																																	
Denver,	1330 Seventeenth St.																																																	
Omaha,	1619 Capitol Avenue, P. C. Ayer.																																																	
Pine Bluffs, Ark.		Geo. M. Dilley & Sons.																																																
Salt Lake City,	239 S. Main St.	Utah & Montana Machinery Co.																																																
Butte, Mont.	4. Granite St.																																																	
San Francisco,	21, 23 Fremont Street,	Parke & Lacy Co.																																																
Portland, Or.	33, 35 N. Front St.	Parke & Lacy Mch. Co.																																																
Charlotte, N. C.	36 College St.	The D. A. Tompkins Co.																																																
Atlanta, Ga.	45 S. Prior St.																																																	
Dallas, Tex.		Keating Imp. & Machine Co.																																																
Chattanooga, Tenn.,		G. E. James & Co.																																																



CAMERON STEAM PUMP

THE STANDARD OF EXCELLENCE.

SIMPLE! COMPACT! DURABLE!

"NO OUTSIDE VALVE GEAR."

Steam, Air & Vacuum Pumps in Every Variety

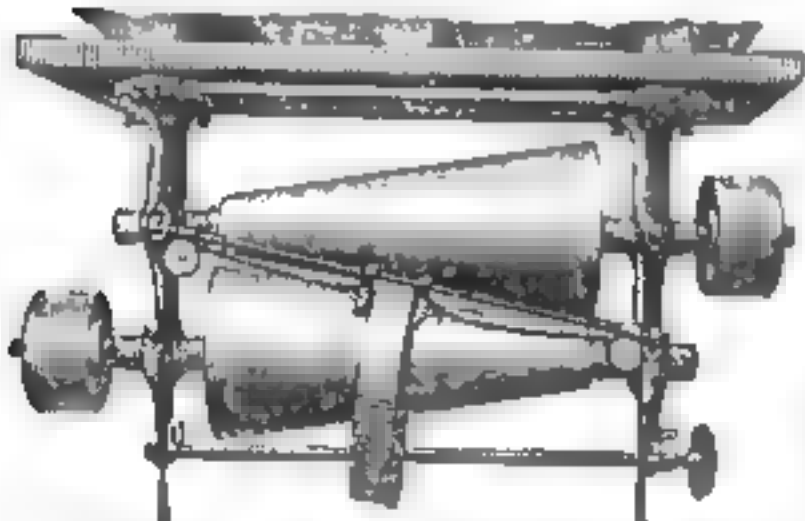
FOR ILLUSTRATED CATALOGUE ADDRESS

THE A.S. CAMERON STEAM PUMP WORKS

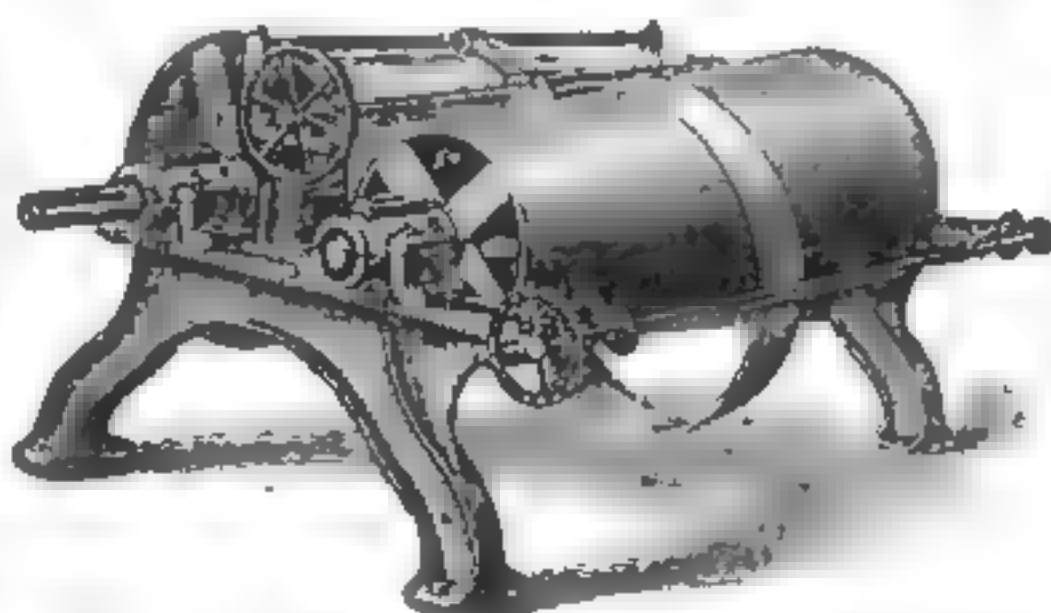
Foot of East 23d Street. - New York.

THE EVANS FRICTION CONE & FRICTIONAL GEARING

"PATENTED."



This cut represents a set of hanging cone pulleys. This pattern is intended for that class of machinery that stops and starts at the same speed, and at the same time be able to change the speed more or less while running. These cones are also fitted with a governor where a steady motion is required and the initial power is



fluctuating. All sizes made from $\frac{1}{2}$ Horse Power to 50 Horse Power. SEND FOR ILLUSTRATED CATALOGUE.

EVANS FRICTION CONE CO., 85 Water St., BOSTON.



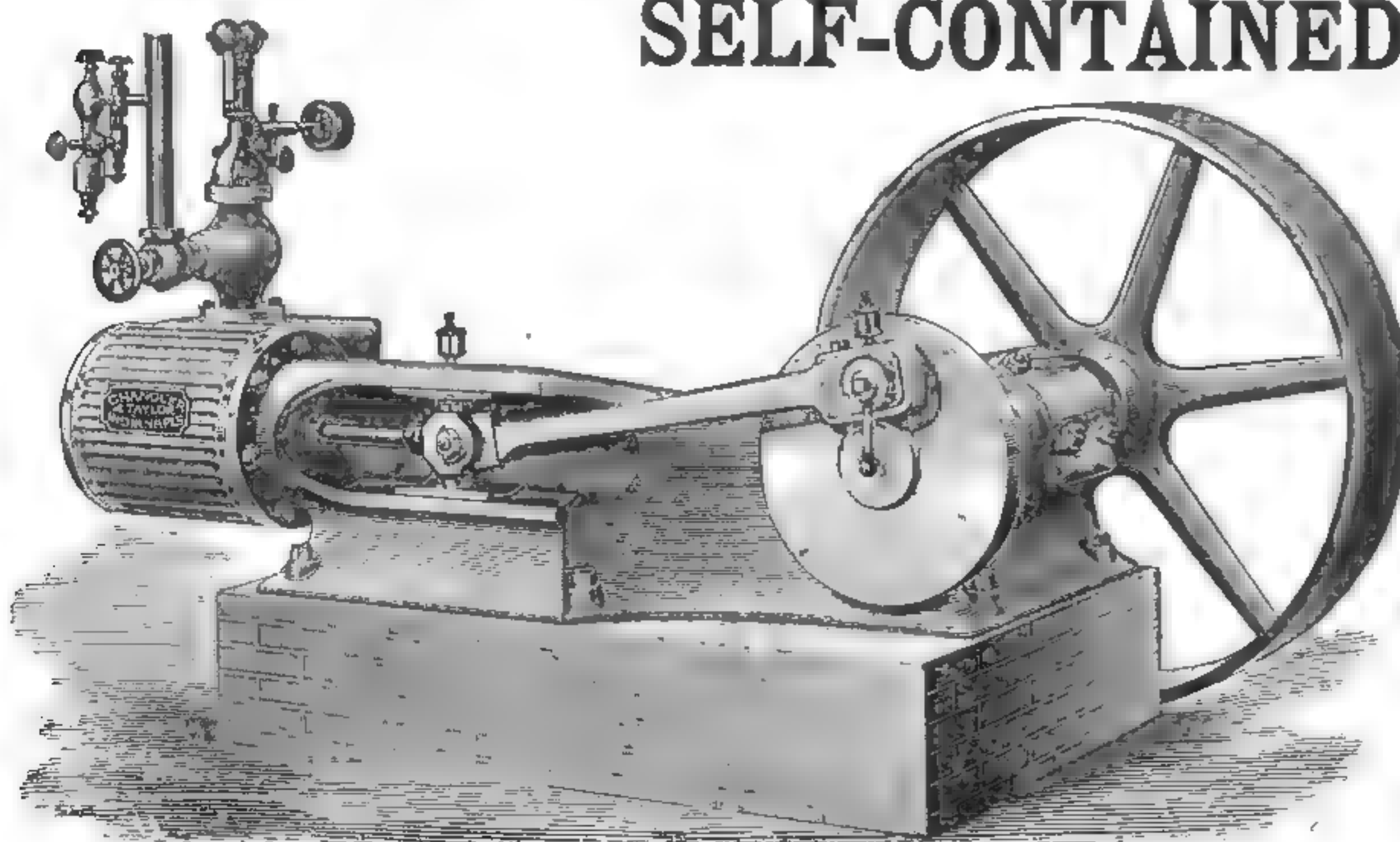
SHIPPERS

CAN SAVE TIME

AND TROUBLE

CASH

BY USING
BARLOW'S
SHIPPING
BLANKS. SEND FOR
SAMPLE SHEET AND PRICES.
- BARLOW BROS. GRAND RAPIDS, MICH.



SELF-CONTAINED STEAM ENGINES

Stationary or

Semi-Portable.

High Standard Maintained.
Prices Greatly Reduced.

WRITE FOR NEW ILLUSTRATED
CATALOGUE NO. 32.

Chandler & Taylor Co.

Indianapolis, Ind.

Engines, Saw-Mills and Drain Tile
Machinery a Specialty.



T. Collister, miller, Pentwater, Mich., is dead.
 A. Gooch, Russellville, Ky., builds a grist-mill.
 J. C. Burch, Green Brier, Tenn., builds a grist-mill.
 Mrs. J. Hallock's grist-mill, Ann Arbor, Mich., burned.
 J. H. and D. N. Holloway, Cherry Ridge, La., build a grist-mill.
 Pringle & Stevens Bros., Swansborough, N. C., built a grist-mill.
 Iowa Park, Tex., men project a large flouring-mill and grain-elevator.
 Steffey & Findlay, Williamsport, Md., are building a 75-barrel roller flouring-mill.

Kanode & Harless, Blacksburg, Va., have put new machinery in their flouring-mill.

F. & H. Fries, Salem, N. C., remodeled their grist-mill to rolls, with steam-power.

Cook & Pickle, Adolphus, S. C., want machinery for a short-system roller flouring-mill.

D. F. Ditmore's Crown Flouring Mills, Rochester, Ind., burned; loss \$10,000; insurance \$4,000.

The Harper's Ferry, W. Va., Milling Co. sold their flouring-mill plant to S. W. Lightner for \$5,300.

Geo. W. Carson's Barry County Roller Mills, Exeter, Mo., burned with contents; loss \$19,000; insurance \$11,000.

The State Board of Agriculture estimates the crops of Missouri this year to be worth \$120,000,000. The oats crop at 12c a bushel amounted to \$46,000,000.

The Central Elevator Co., grain-elevators, Chattanooga, Tenn., assigned; liabilities \$170,000; claimed assets last January \$280,275; paid-in capital \$52,300.

During September, this year, we imported bolting-cloths valued at \$25,745, against \$25,442 during September, 1888, and for the nine months ending Sept. 30, this year, we imported bolting-cloths valued at \$211,326, against \$216,453 for the same period in 1888.

She objected to the last barrel of flour which the grocer had brought, and after using a few scoopsful from the top of the barrel, headed it up and told the grocer to take it away; she would use no such flour as that. The next barrel brought was perfectly satisfactory. "Now that is something like flour," she told the family. But when she reached the bottom of the barrel she found her old flour-scoop, long missing, which had been headed up in the other end. The grocer had merely brought back the same barrel with the other end uppermost.

A Syracuse, N. Y., dispatch of November 28 says: An Iliion man has invented a pancake machine which threatens to revolutionize the present way of making that article of diet. The batter is placed in what may be termed a hopper on the top of the small machine, which is placed on the breakfast table. When cakes are wanted the machine, which works by a spring, is set in motion, and the batter passes between two very highly polished rollers, heated very hot by a spirit-lamp. The cakes are thus rolled off and cut in the required shape by a sharp knife and thrown upon the plate which is held ready to receive them.

Says the Atlanta, Ga., *Constitution* of November 6: "We have just put in at the elevator," said Manager George E. Hoppie, "a set of six-ton track-scales, the largest, I suppose, in the South. I can tell you a funny thing about those scales. There has been some complaint of shortage of weights in our inside scales, and we got these track-scales as a check. After we had put in these new scales, some of our men were cleaning out the chutes which conveyed the grain to those inside scales, when they found two big fat 'possums. I wouldn't believe that they had come from the chutes until I investigated for myself, then I became satisfied that the fault wasn't with the scales."

Says the Winnipeg, Manitoba, *Commercial*: The local situation has

been marked by slowness in deliveries, receipts at country points in Manitoba showing a considerable falling off, which may be partly due to weather changes, and perhaps low prices, though there is not much change in this respect from prices ruling all the season. However, as farmers now have a considerable portion of their surplus marketed, they may be holding for better prices. Some say that the falling off is owing to the statement that the bulk of surplus wheat has already been marketed. If this is the case the exportable surplus for Manitoba this year will be under 5,000,000 bushels, about one half that amount having been marketed so far.

BOOKS AND PAMPHLETS.

Inventor's Manual. "How to work a Patent to make it Pay," is the title of a book containing much valuable information of interest to inventors and manufacturers. Thousands of useful and meritorious inventions are every year patented, on which the inventor is unable to realize any profit simply for want of information as to the best method of introducing or disposing of his invention. The "Inventor's Manual" is a book of 100 pages and is designed as a guide to inventors in perfecting their inventions, taking out their patents and disposing of them. Among the subjects treated in this work are: How to invent. How to secure a good patent. Value of a good invention. How to exhibit an invention. How to interest capital. How to estimate the value of a patent. Advice on the formation of stock companies. Forms for assignments, licenses and contracts. State laws concerning patent-rights and other items of information not generally accessible to the inventor or manufacturer. Cloth bound. Price \$1.00. J. F. Davison & Co., Publishers, 120 Broadway, New York. This little volume should be in the hands of all who are in any way interested in the subject of patent-rights.

The "Aladdin Cooker" and the "Aladdin Oven," inventions of Hon. Edward Atkinson, are described and illustrated in the last number of *Good Housekeeping*. By this process of cooking it is claimed there is a great saving of fuel, time and food. The experiments already made have been very successful, and the description of the apparatus and methods published in *Good Housekeeping* will be found of interest to every household. The issue of *Good Housekeeping* for December 21 will be a holiday number, the Christmas plums being, "At Christmas tide," an illustrated poem, followed by interesting papers, including "Miss Dorothea's Christmas," "Presenting Christmas Presents," "Out of the Christmas Snow," "Plants of Christmastide," "The Children's Christmas Party," "Mince Pies," "How to Cook a Ham," the New Year's Presents being a paper on "Household Service Reform," by Edward Bellamy, Helena Rowe's ever welcome "Family Fashions and Fancies," Mrs. Campbell's Fortnightly Installment of "Woman's Work and Wages," and a timely paper on "Rabbits, How to Prepare and Cook Them." It will be a holiday issue every way worthy of the Christmas and New Year's season and in keeping with the good things which *Good Housekeeping's* Table of Contents furnishes on special occasions.

A VALUABLE AND UNIQUE BUSINESS CALENDAR.—The most convenient, valuable and unique business table or desk calendar, for 1890, is the Columbia Bicycle Calendar and Stand, issued by the Pope Mfg. Co., of Boston, Mass. The Calendar proper is in the form of a pad of 366 leaves, each $5\frac{1}{4} \times 2\frac{3}{4}$ in., one for each day of the year, to be torn off daily, and one for the entire year. A good portion of each leaf is blank for memoranda, and as the leaves are not pasted, but sewed at the ends, any entire leaf can be exposed whenever desired. By an ingenious device, the leaves tear off independently, leaving no stub. The portable stand, which holds the pad, contains pen rack and pencil holder, and is made of solid wood, brass mounted. Upon each slip appear quotations pertaining to cycling from leading publications and prominent writers, and although this is the fifth year of the calendar, the quotations are fresh and new, mentioning the notable facts in cycling, opinions of medical authorities, clergymen and other professional gentlemen, the rights of cyclers upon the road, advice upon costumes, directions about road making, with occasional mention of the bicycles and typewriters made by the Pope Mfg. Co., and the information therein contained would, if placed in book type, make a fair-sized volume.



W.A. BINGHAM,
 MANUFACTURER OF
FLOUR SACKS.
 178 Duane Street,
 New York.

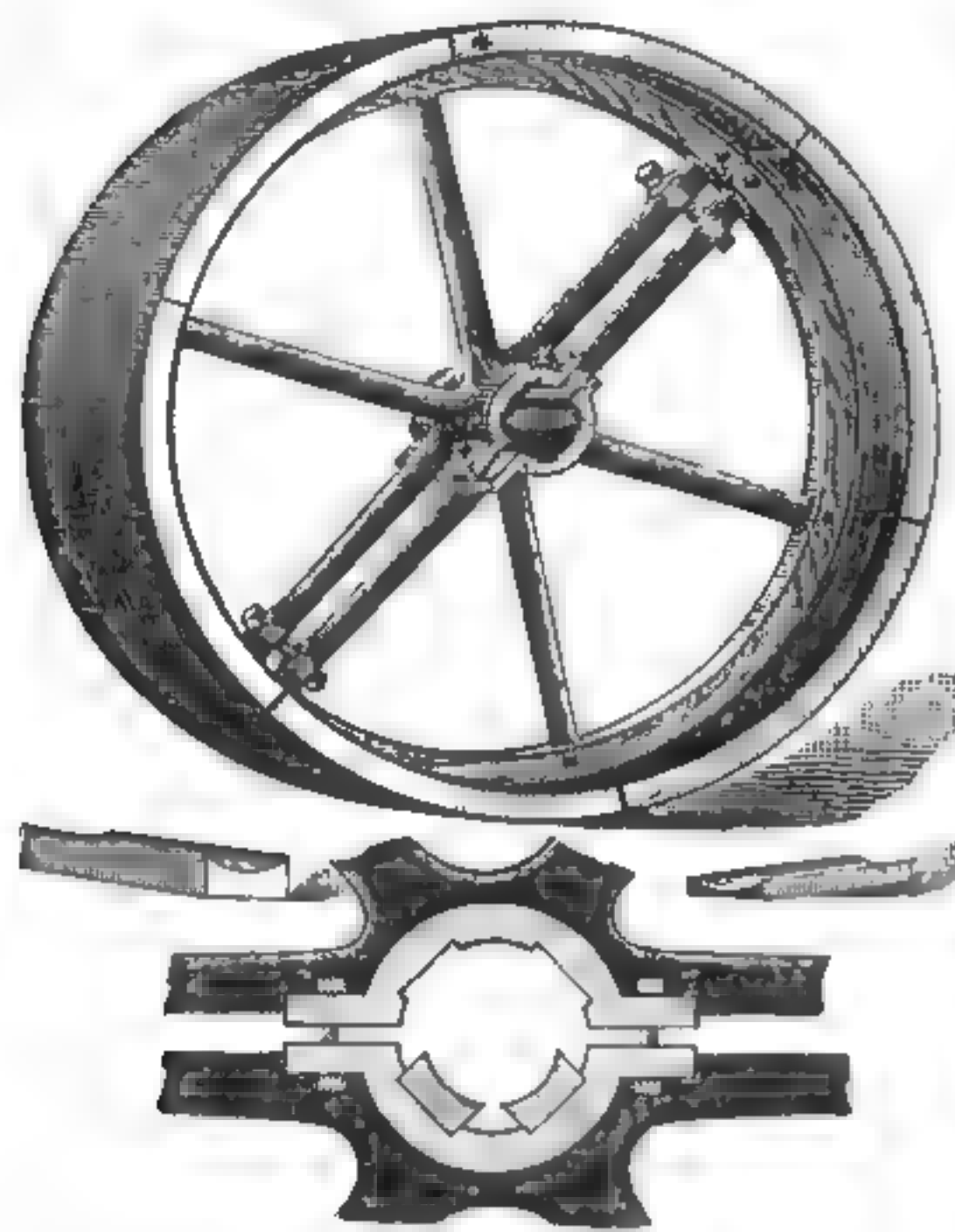
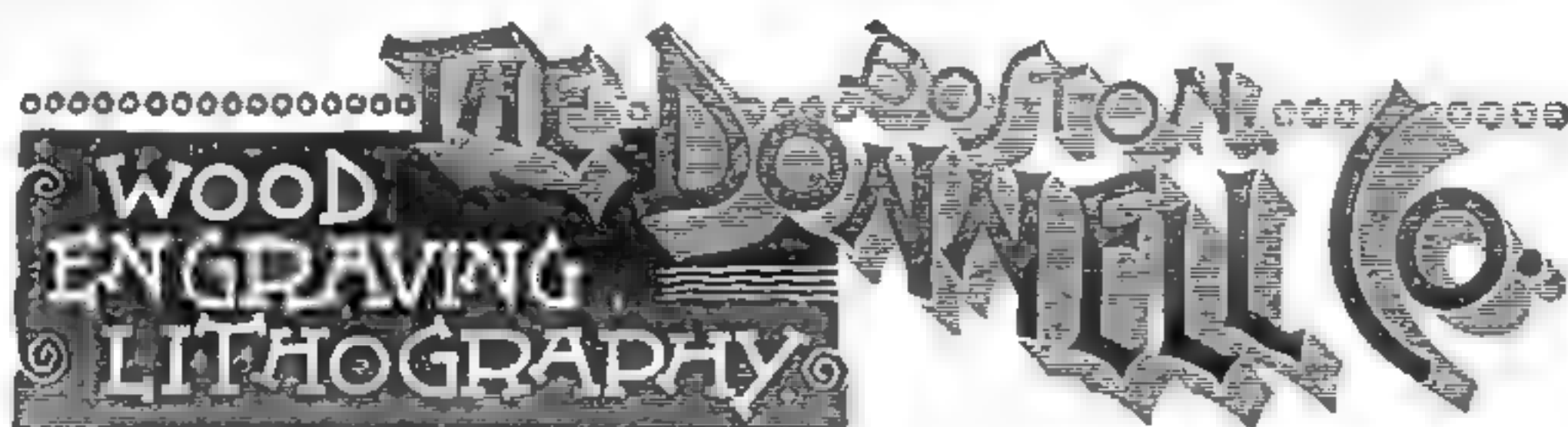


THE BEST ARE THE CHEAPEST.

New York

MILLERS' FLOUR SACKS A SPECIALTY.

THE PATRONAGE of the MILLING TRADE is MOST RESPECTFULLY SOLICITED.



BIRD & CRANE MFG. CO., KALAMAZOO MICH.

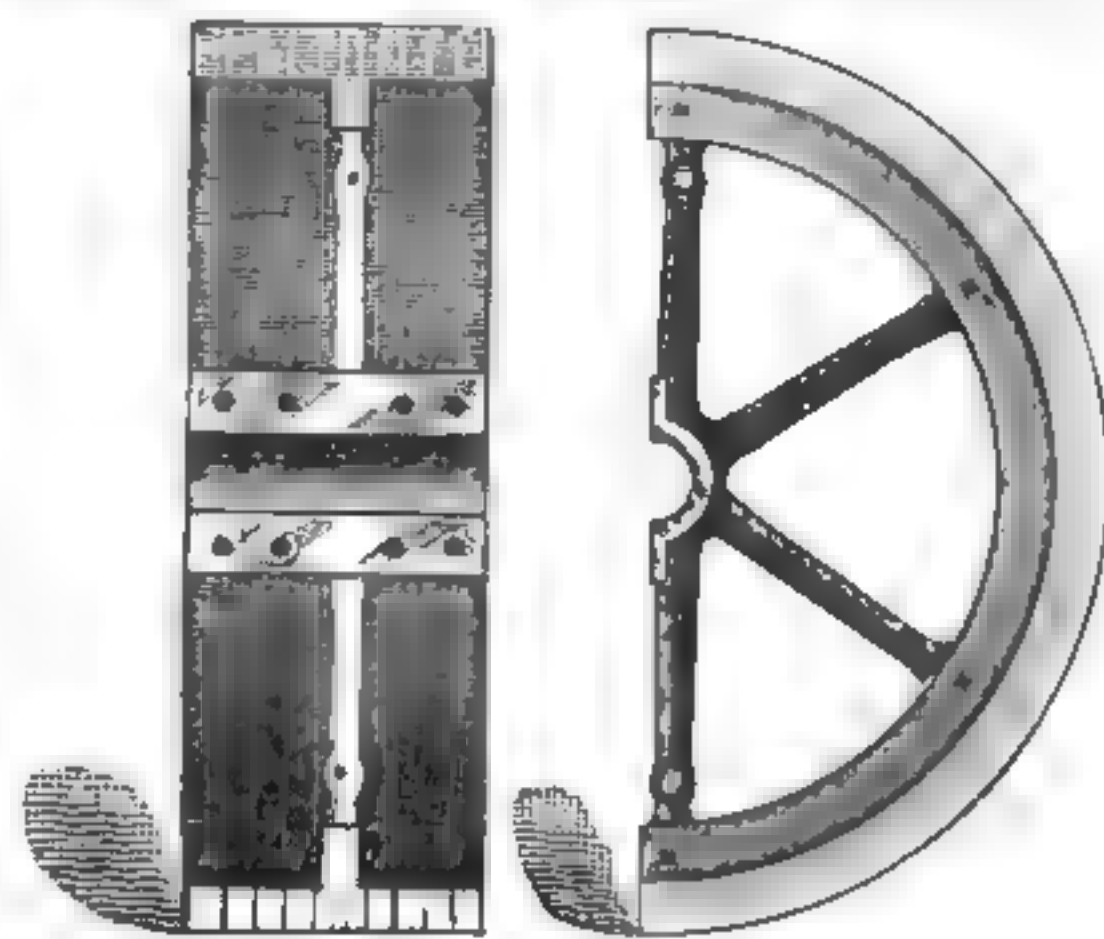
MANUFACTURERS OF PATENT

Wood Split Pulleys

WOOD RIM WITH IRON ARMS.

The Best Pulley on Earth!

Is very easily and quickly adjusted to Shaft. Has Patent Iron Bushings Interchangeable, to Fit Different Diameters of Shafts. Has FOUR or SIX Bearings on Shaft. This fastening never slips. Every Pulley strongly built and perfectly balanced.



SEND FOR CATALOGUE AND PRICE LIST.

PRINCIPLES OF THE ECONOMIC PHILOSOPHY OF SOCIETY, GOVERNMENT AND INDUSTRY.

BY VAN BUREN DENSLOW, LL. D.

800 pages, 8vo. With diagrams, charts, &c.

Cloth, \$3.50. Half Calf or Morocco, \$7.00.

Lecturers, Editors, Legislators, Politicians, and all others expecting to speak or vote on Railway, Monetary, Banking, Labor, Tariff, or Social Question, should buy and master it.

Conservative and Radicals, Democrats and Republicans, College Professors and Farmers, Reformers and Practical Men of Business will find in it confirmation of their truths or correction of their errors.

It is American. It is Accurate. It is Scientific. It is Entertaining. It is Non-Partisan.

Critics most opposed to it dare not attack it.

Journals whose errors it exposes heartily praise it.

The foremost American statesmen declare it "the most valuable and fascinating work yet written."

[From SENATOR JUSTIN S. MORRILL, of Vermont.]

"The most valuable American work yet published on the subject. It is loaded with facts, and its exposure of the fallacies of free trade is very thoroughly done."

[From the HON. JAMES G. BLAINE.]

"From what I have learned from others and from my own reading I believe it to be a true and able exposition of the subject, and a strong statement of the principles of protection."

[From the HON. JOHN SHERMAN.]

"I believe it is an excellent statement of the elements of political economy, viewed from the standpoint of a conservative protectionist."

[From the HON. W. M. EVARTS, Senator from New York.]

"Am glad to give my hearty approval of it: I wish it might be widely read, and especially that it might be introduced in our colleges and higher schools, where its intelligent and comprehensive views of the elements of public welfare would rapidly replace the narrow and pretentious doctrines of what is there taught under the name of political economy."

[From PROF. ROBT. D. SHEPARD, Northwestern University, Evanston, Ill.]

"The brightest and most readable work on the subject that has come into my hands for many a day. * * It is our opinion that the work is splendidly adapted for advanced students in political economy."

[From the N. Y. Tribune, February 23, 1889.]

"The best thinkers may gain from it a better comprehension of the problems which lie at the foundation of economic science, while its breadth of learning and richness of illustration render it helpful to those who desire to comprehend the causes which fillstreets with strikers and Treasury vaults with silver, which prompt the cry of the landless and the cry of the corporation hater, which open mines and light the fires in furnaces and start the music of thousands of spindles and yet leave multitudes to believe that the wealth for these works is stolen from their ill-requited toil."

[From the RT. REV. THOS. S. PRESTON, D. D. Vicar General, &c., of New York.]

"It is a work of learning, and is replete with the most valuable information. The manner in which on economic principles and the presentation of facts you have refuted the false theories of communism and socialism is above all praise."

[From the MOST REV. M. A. CORRIGAN, D. D., Archbishop of New York.]

"Your masterly exposition of the absurdity of the theories of Mr. George is very appropriate at this time and it seems to me unanswerable."

For Sale by all Booksellers.

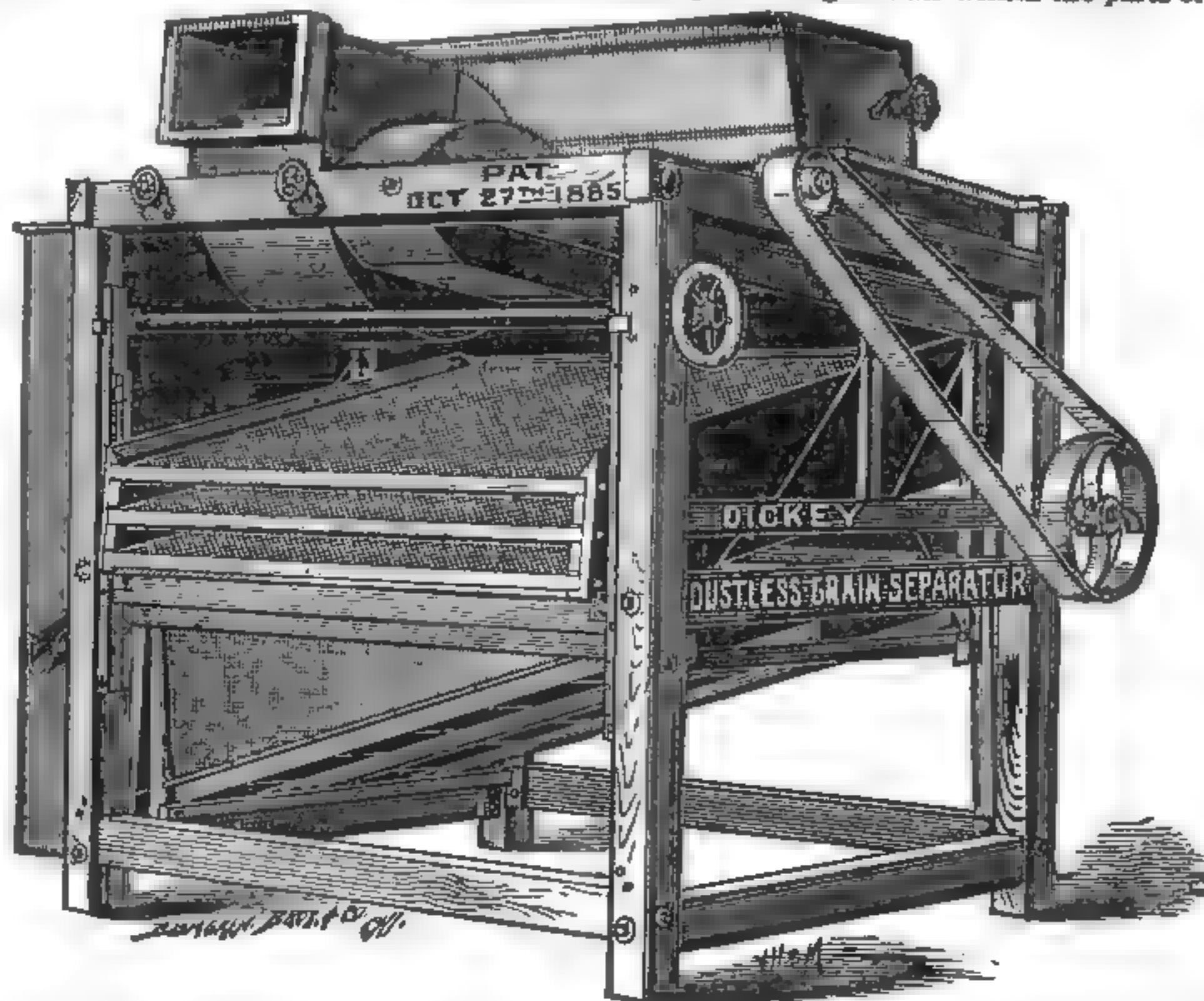
CASSELL & COMPANY, Limited,

104 and 106 Fourth Avenue, - NEW YORK.

The Cincinnati Corrugating Co.

DICKEY DUSTLESS GRAIN AND FLAX SEPARATOR

This Separator is our latest and most perfect, and guaranteed to be the superior of any now on the market. This machine, as can be seen by the cut, is not a warehouse fanning mill with one patent attachment, but is Dustless Separator, made for the express purpose of thoroughly cleaning and separating all kinds of grain in large quantities; its construction is such that the working machinery and weight is all within the parts or anchors.



WE CLAIM FOR IT SUPERIORITY.

WE CLAIM FOR IT SUPERIORITY.

We claim for it Superiority over everything of the kind made, in simpleness, durability, saving of power, capacity and cost of construction. Its height will accommodate any number of spouts from different points, without moving machine. They have a capacity from 700 to 1,500 bushels per hour. We also control exclusively the manufacture of the celebrated Dickey Giant, End and Side Shake, Warehouse Mills, that have attained such a world-wide reputation. Sent on approval to any reliable party. For full particulars address,

A. P. DICKEY MANUFACTURING CO., Successors to **DICKEY & PEASE, RACINE, WIS.**

EUROPEAN ECHOES.

A EUROPEAN journal says: In connection with the present satisfactory reports of crop prospects in Australia, it may not be inappropriate to direct attention to the comparative smallness of the quantity of Australian wheat that reaches Europe, and especially the United Kingdom. In round numbers the average wheat crop of Australia, including New Zealand, in the six years 1883-88 was 4,570,000 quarters, of which 1,500,000 quarters were exported to Mauritius, Cape Colony, Great Britain, France and other countries.

FOLLOWING is the official preliminary estimate of the Russian wheat crop of 1889, comparison being made with the crops of the two preceding years:

	1889.	1888.	1887.	5 yrs' av'ge. 1883 to 1887.
	Quarters.	Quarters.	Quarters.	Quarters.
Winter Wheat.....	5,040,000	13,882,000	11,952,000	8,352,000
Spring Wheat.....	19,296,000	22,365,000	21,672,000	18,754,000
Total.....	24,336,000	35,747,000	33,624,000	27,106,000

Compared with last year the deficiency is nearly 33 per cent., which justifies the opinion which the Russian merchants in London had expressed ever since the harvest. Compared with the average of the crops of 1883 to 1887 the deficiency is 10 per cent. The crops in Poland are not included in these figures; if they were the deficiency would be still greater, because the crop in Poland this year has been very deficient, according to all accounts.

SAYS the Liverpool "Corn Trade News" of November 20: The following tables show the imports of foreign wheat and flour into the United Kingdom during the first 11 weeks of the season, together with the farmers' deliveries, multiplied in previous years by 3, but this season by 2½. Flour brought back to wheat at 70 per cent:

	1889-90.	1888-9.	1887-8.	1886-7.
Farmers' deliveries....	1,802,250	1,683,270	2,206,482	1,649,000
Foreign wheat.....	3,079,487	3,586,155	2,418,052	2,680,000
" Flour.....	1,167,987	1,258,548	1,408,035	1,083,000
Total qrs.....	6,049,524	6,527,973	6,032,569	5,412,000
Supposed requirements 11 weeks.....	5,700,000	5,650,000	5,600,000	5,550,000

According to the figures for this season, we ought to look for an increase in the United Kingdom stocks of 349,000 quarters since Sept. 1. At that time we gave the stocks at 2,000,000 quarters, and to-day our usual weekly table shows a theoretical stock of 2,316,000 quarters.

THERE has been a large advance in the amount of wheat consumed per head by each French inhabitant, as will be seen by the annexed table:

Decade.	Bushels per Head.	Consumption. Bushels per Household.
1831 to 1841.....	4½	18
1842 to 1851.....	5	21
1852 to 1861.....	5½	—
1862 to 1871.....	6	21½
1872 to 1881.....	6¾	24½
1882 to 1888.....	7¼	28¾

This not only appears to be a very important rise in the wheat consumption of France, but it also indicates a much greater consumption per head than that of other countries. For example, in the United Kingdom it is said that the estimated allowance of wheat per individual was 5½ bushels between 1880 and 1889, against 5 bushels per head in the period between 1853 and 1863. It is also considerably above the amount per head in the United States, which is estimated by the Statistician of the Department of Agriculture at 4½ bushels.

ENGLISH reports sum up the European wheat situation as follows: The present feeling in the trade seems to be decidedly more confident than it has been for some time past, although there is no change in the real position. The supposed large deficiency in the Russian crop, it is true, is officially confirmed; but it is clear that, if prices improve sufficiently, Russia could supply enough from her reserves of old wheat

to equal the previous season's export of 50,000,000 bushels. The closing of navigation is at hand, and stocks in the United Kingdom, with the quantity afloat, are 9,600,000 bushels less than at this time last year, and stocks in all South Russian ports must be at least 8,000,000 bushels less than last year, while the fact that Italy and other Mediterranean ports are taking a larger proportion of the Russian shipments than was expected also lends strength to the position of holders. Italy imported in the four months ended Sept. 30 no less than 13,000,000 bushels, against 6,400,000 bushels in the corresponding period last year.

SAYS an English letter: Importers of flour have discovered another little trick of those encouragers to the export flour trade, the steamship lines, to which they naturally object most vigorously. It appears that when flour which has been damaged by wet arrives on the other side, the steamship companies insist on emptying the flour, sieving it and, after scraping the lumps off which adhere to the bag, return the flour to it and sew it up. They then tender the package as in good condition. Importers by this disgusting bit of petty trickery suffer a loss of flour, a damage to quality and a mixture of grades, and it is practiced in Glasgow, Liverpool and Belfast with great success by the steamship companies, who are a law unto themselves and pay no attention whatever to the objections of the receiver. If they were unable to find enough flour to fill the damaged sacks, and should see fit to issue an order to the effect that shot, sand or mud was a fair equivalent, there is probably no law to prevent them from tendering sacks so filled. That lovely and altogether beautiful document which is called a bill of lading, and which is beloved of all seafaring gentlemen, is framed especially for the purpose of giving no ground whatever for basing a complaint upon. The American miller loves to extol the magnitude of his trade, his enterprise, business genius and great energy, and he is absolutely powerless to provide and enforce a better or fairer document.

THE English idea of Duluth, Minnesota, is given by the London "Financial Times" as follows: Rapid and extensive as the growth of Chicago has been, it promises to be excelled in both respects by Duluth, whose situation at the head of Lake Superior renders it the natural terminal point for the vast territory of the North-West, covering an area of nearly 300,000 square miles. This region includes some of the richest wheat lands in the world, valuable lumber tracts and inexhaustible mineral wealth. Duluth is at present inferior to Chicago only in size and population. In all other respects its people claim immense superiority. It is 500 miles further inland, but it is the same distance by water to Buffalo or Montreal. Navigation is open for nearly seven months in the year and sometimes longer. It possesses a capacious harbor, sheltered from the storms on the lake and accommodating vessels of the largest class. There are also most extensive docks, provided with every facility for the rapid loading and discharge of cargoes. In one recent case a ship unloaded 2,000 tons of coal, was cleared, received 78,000 bushels of wheat and sailed within 12 hours. Two others, arriving empty, took in 127,000 bushels in 4½ hours. This expeditious work is accomplished by a series of elevators, which are justly considered perfect of their kind. They are located beside deep water, so that the largest ships can approach, and are worked by night as well as by day. Nowhere else on the great chain of lakes is grain handled so quickly. There are at present 16 elevators, with a united yearly capacity of nearly 21,000,000 bushels. Duluth is as near as Chicago to the eastern seaboard and much nearer by rail to the great wheat and corn districts of the west. The tributary territory comprises more than 3,000 miles on the St. Paul, Minneapolis and Manitoba railroad, and 13,000 miles in addition, served by the Northern Pacific and other lines that converge upon Duluth. When it is remembered that the first railroad was only constructed in 1870, from St. Paul, and that for some years all communication with the east and west was by way of Chicago, the development has been marvelous.

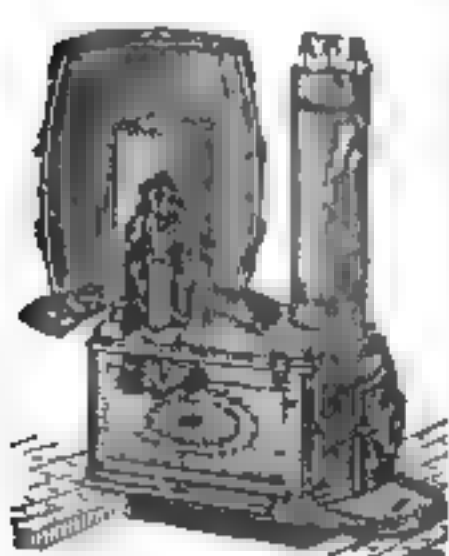
Lloyd & Sterrett

COR. 16TH AND STATE STREETS,
ERIE, - - PENN.

THIS SPACE BELONGS TO
LLOYD & STERRETT
ENGINES AND BOILERS,
ERIE, - - - - PENN.

Lloyd & Sterrett

COR. 16TH AND STATE STS.,
ERIE - - PENN.



**MOORE'S
PATENT
BARREL HEATER.**
For all
kinds of coop-
erage. Thousands
in use in all parts of the
U. S. Send for Circular.

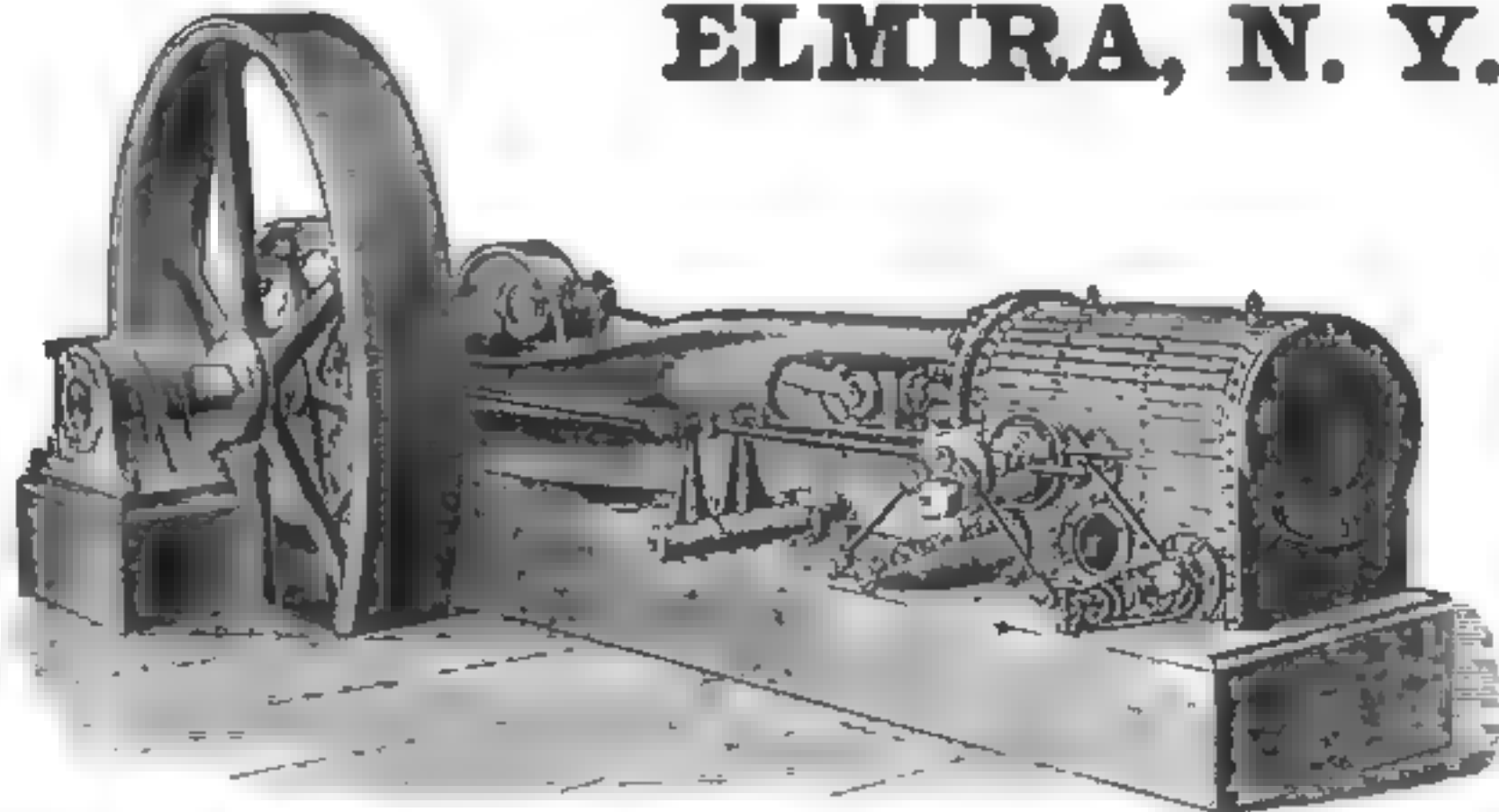
JOLIET STOVE WORKS. JOLIET ILL.

PAYNE HIGH SPEED CORLISS ENGINE

SHAFT GOVERNOR COMBINED WITH CORLISS WHIST-PLATE.
ECONOMY OF FUEL.

REGULATION EQUAL TO ANYTHING IN USE.

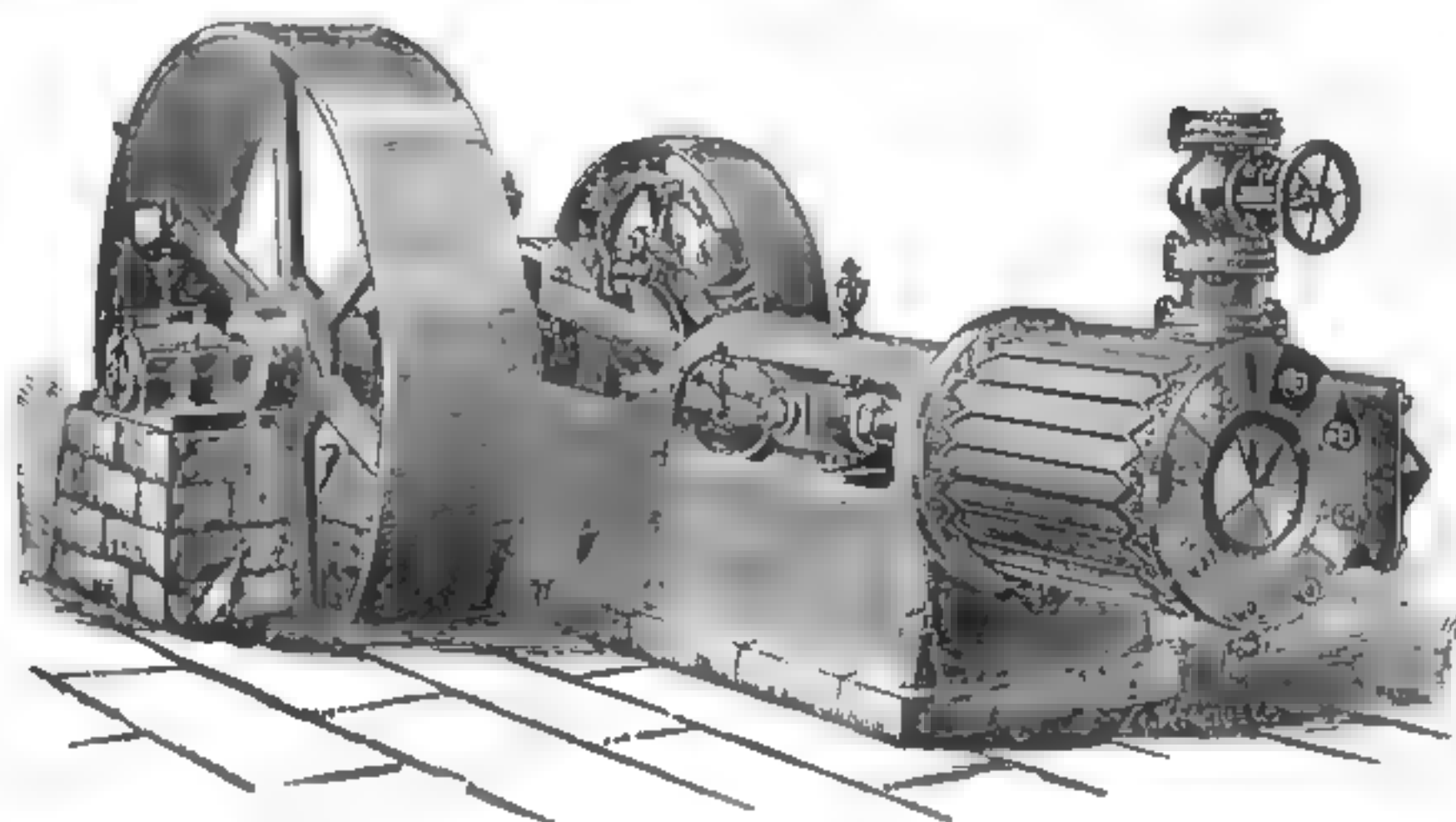
B. W. Payne & Sons,
ELMIRA, N. Y.



10 S. Canal Street,
CHICAGO, ILL.
45 Dey Street,
NEW YORK.
Hill, Clark & Co.
BOSTON, MASS.

AUTOMATIC ENGINES FROM 2 TO 200 HORSE POWER.

Economic Power Plants



Especially Adapted to Electric Lighting and
WOOD-WORKING ESTABLISHMENTS
MANUFACTURED BY
VALLEY IRON WORKS, WILLIAMSPORT, PENN.

Please Send for Our New Catalogue and Mention "The Milling World."



BRANCH HOUSE, 1425 EAST MAIN STREET, RICHMOND, VA.



KEEP YOUR BELTS FROM SLIPPING

And Save Your Power by Using FRICTION COVERING for Pulleys. Agents
Wanted. Satisfaction Guaranteed- Easily Applied. No Rivets. Effective.

NATIONAL PULLEY COVERING CO., BALTIMORE, MD.



OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., Dec. 7, 1889.

Friday of last week brought dull and easier markets in New York. The sensation of the day was in the Chicago market, where, under a "squeeze" in November corn, that option sold up to 60 cents. "Old Hutch" was caught this time, according to report, and the man who engineered the "squeeze" was said to be Cudahy, whom Hutchinson "squeezed" last year in the September wheat deal. In New York November wheat closed at 83½c., with Atlantic port receipts 410,557, exports 37,240, and options 5,500,000 bushels. November corn closed at 41½c., with receipts 186,486, exports 34,446, and options 1,116,000 bushels. December oats closed at 28½c., with receipts 337,593, exports 91,458, and options 80,000 bushels. Wheat flour was dull, unchanged and in buyers' favor, with receipts 25,684 sacks and 61,408 barrels, and exports 7,387 sacks and 11,383 barrels. The minor lines were quiet.

Saturday brought dull, irregular and indifferent markets. December wheat closed at 83½c., with receipts 211,156, exports 80,209, and options 1,400,000 bushels. Total interior wheat receipts for the week were 4,113,000 bushels. December corn closed at 42c., with receipts 142,555, exports 145,693, and options 440,000 bushels. December oats closed at 28c., with receipts 229,530, exports 25,357, and options 80,000 bushels. Wheat flour was possibly slightly steadier, with receipts 18,660 sacks and 47,649 barrels, and exports 21,350 sacks and 32,329 barrels. The minor lines were not quotably changed.

December markets opened dull and easier on Monday and closed stronger on fair deliveries. December wheat closed at 83½c., with receipts 167,948, exports 40,225, and options 10,000,000 bushels, including New York "curb" operations. December corn closed at 42c., with receipts 139,819, exports 122,988, and options 550,000 bushels. December oats closed at 28½c., with receipts 219,313, exports 10,046, and options 100,000 bushels. Wheat flour was steady and unchanged, with a fair demand generally. Bakers' springs in barrels were active for home trade, and No. 1 and patent springs for export. Receipts were 22,372 sacks and 47,410 barrels, and exports 11,657 sacks and 16,168 barrels. The published stocks of flour in New York included 59,600 barrels of spring and 108,000 barrels of winter, a total of 167,000 barrels on the first of December, against 139,000 barrels November 1, 1888. The figures this month were not believed to include all the stocks on hand, as dealers were disinclined to report fully. The minor lines were featureless. The visible supply in the United States and Canada was as follows:

	1889.	1888.	1887.
	Nov. 30.	Dec. 1.	Dec. 3.
Wheat.....	31,472,359	36,082,738	40,260,032
Corn.....	6,204,128	7,056,076	5,236,431
Oats.....	5,116,954	7,557,016	6,384,738
Rye.....	1,262,331	1,651,236	280,218
Barley.....	2,990,573	2,329,903	3,593,765

Tuesday brought higher and more active markets on smaller receipts, stronger cables and better export demands. December wheat closed at 84½c., with receipts 109,717, exports 161,347, and options 5,576,000 bushels. December corn closed at 42c., with receipts 184,911, exports 173,372 and options 750,000 bushels. December oats closed at 28½c., with receipts 120,645, exports 34,743, and options 100,000 bushels. Wheat flour was dull, unchanged and generally easy. Receipts were 35,487 sacks and 44,877 barrels, and exports 47,049 sacks and 4,000 barrels. The minor lines were unchanged.

The following shows the amount of wheat and flour, together with the amount of corn on passage to United Kingdom, for ports of call or direct ports for the weeks mentioned:

	1889.	1888.
	Dec. 3.	Dec. 4.
Wheat and flour, qrs....	1,900,000	2,439,000
Corn, qrs.....	381,000	160,000

The following shows the amount of wheat and corn on passage to the Continent for the past week and for the same week last year:

	1889.	1888.
	Dec. 3.	Dec. 4.
Wheat, qrs.....	436,000	628,000
Corn, qrs.....	166,000	68,000

Shipments India wheat to U. K.	95,000
do do Continent..	25,000

The imports into the United Kingdom for the past week and for the same weeks in previous years were as follows:

	1889.	1888.	1887.
	Dec. 3.	Dec. 4.	Dec. 6.
Wheat, qrs.....	272,000	345,000	330,000
Corn, qrs.....	114,000	60,000	109,000
Flour, bbls.....	228,000	135,000	227,000

Wednesday brought irregular and somewhat active markets. Wheat was active and lower, December closing at 84½c., against \$1.06 on the same date last year, with Atlantic port receipts 107,432, exports 3,709, and options 11,520,000 bushels. High ocean freight prevented exporters from doing much cash business. Home trade was good at the decline. December corn closed at 42½c., with receipts 183,108, options 424,000, and exports 122,881. December oats closed at 28½c., with receipts 155,726, exports 21,060, and options 910,000 bushels. The strength in oats was due to Chicago bulling. Buckwheat grain was flat at 36@47c. for poor to choice. Rye grain was strong and active at 59@60c. for State and Canada, 56@57c. for No. 2 Western delivered, and 52@55c. for ungraded in car-lots. Reports indicated but a small amount of choice rye in the State, because of damage to the grain by the wet harvest. Barley was slack and dull at 53c. for 2-rowed, 56@58c. for 6-rowed, 58c. for No. 2 Canada and 60c. for No. 2 extra Canada. Malt was nominal at the following quotations: Country-made old 70@85c; new do 80@85c; two-rowed State old 67½@72½c; new do 70@75c; six-rowed old 67½@75c; new do 75@80c; Western old 45@72½c; new do 75@80c. Mill-feed was steady and unchanged, with a fair demand, and sales 2,000 sacks 40 and 60-lbs. at 62½c, and 500 100-lb. at 82½c. We quote 57½@62½c. for 40, 60 and 80-lbs; 75@85c. for 100-lbs., red and white, chiefly at 89c.; rye 70c.

Wheat flour was quiet and featureless, with some cables for No. 1 and bakers' springs at 12c. under the New York market. Atlantic port receipts were 39,808 sacks and 34,315 barrels, and exports 1,143 sacks and 6,511 barrels. The quotations were:

	SPRING FLOUR.	
	Sacks.	Barrels.
No grade.....	\$1.50@1.60@....
Fine.....	1.80@2.05	1.95@2.20
Superfine.....	2.05@2.30	2.30@2.65
Extra No. 2.....	2.30@2.60	2.55@2.85
Extra No. 1.....	3.00@3.20	3.25@3.75
Clear.....	3.05@3.35	3.40@3.50
Straight.....	3.80@4.20	4.15@4.70
Patent.....	4.60@4.80	4.80@5.20

	WINTER FLOUR.	
	Sacks.	Barrels.
No grade.....	\$1.45@1.70@....
Fine.....	1.90@2.20	2.00@2.30
Superfine.....	2.25@2.45	2.25@2.50
Extra No. 2.....	2.40@2.70	2.50@2.80
Extra No. 1.....	2.70@3.70	2.85@3.60
Clear.....	3.25@3.60	3.55@3.85
Straight.....	3.85@3.90	3.95@4.30
Patent.....	4.10@4.30	4.35@4.80

	CITY MILLS.	
W. I. grades.....	4.25@4.35	
Low grades.....	2.40@2.50	
Patents.....	4.90@5.50	

Rye flour was dull and unchanged, at \$3.25@3.50. Buckwheat flour was slow at \$1.75@1.95 for good to choice. The strength caused by the "cold snap" was lost on the "warm wave" of Wednesday. Corn products were in fair demand and steady at the following quotations: Coarse meal 81@83c; fine yellow 92@95c; fine white 93@96c; Western and Southern 78@94c.

in bags and \$2.50@2.60 in bbls. Brandywine and Sagamore \$2.65.

Thursday brought little change in the market conditions. In New York December wheat closed at 84½c., with receipts 93,000 and exports 69,729 bushels. December corn closed at 42½c., with receipts 27,800, exports 40,374, spot sales 194,000, and options 326,000 bushels. December oats closed at 28½c., with receipts 99,100, spot sales 251,000, and options 1,060,000 bushels. Wheat flour was steady generally, with receipts 33,979 packages, and sales 24,900 barrels. The minor lines were featureless.

BUFFALO MARKETS.

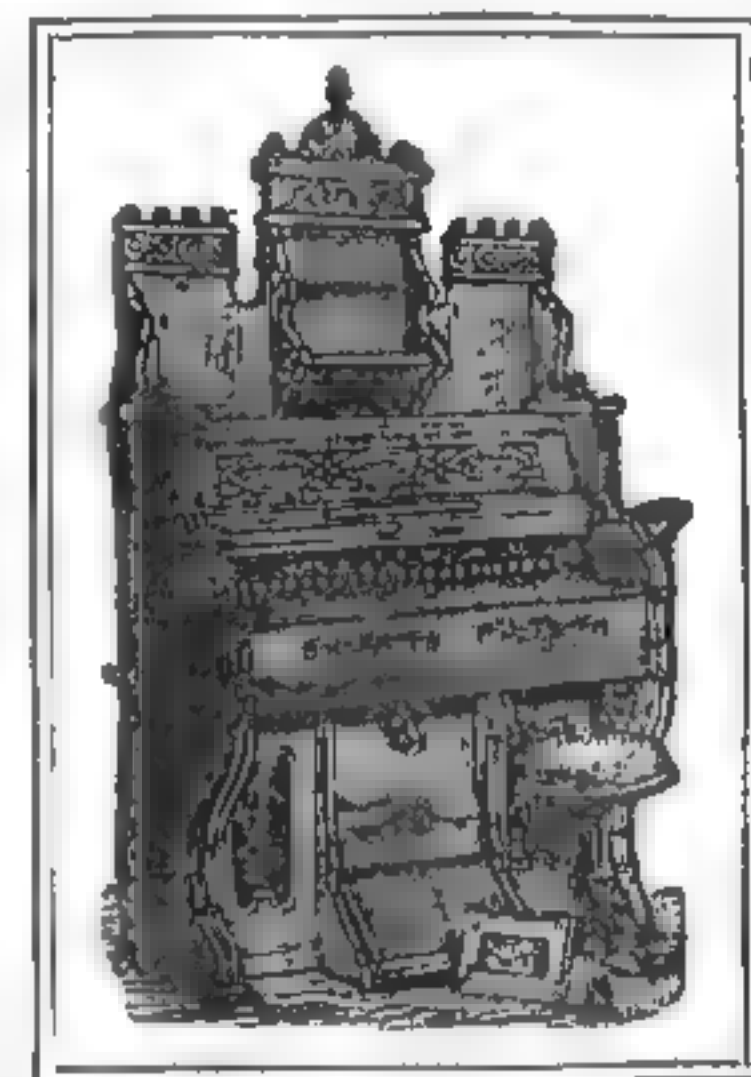
WHEAT—Wheat is dull with little doing. No. 1 hard is held at 91c, but no offers. A load of No. 1 Northern sold to-day at 87c. A load of No. 2 red winter was sold at 86c, but 85@85½c seem to be the general holding prices. Some No. 2 white was sold at 79c. CORN—No. 2 mixed sold to-day at 38½c, and No. 2 yellow is held at 39c. The market is steady but quiet and very little doing. OATS—The market remains very steady, but quiet, at 27½@27¾c. for No. 2 white. A little only was sold at these prices. BARLEY—The market is almost entirely nominal. The range is 55 to 65c for Canada. Some Canada was sold to-day at 56c, and some State at 52c. OATMEAL—Akron, \$6.00; Western \$5.75 per bbl; rolled oats, in cases, 72 lbs, \$3.25. CORNMEAL—Coarse, 80@85c; fine, 85@90c; granulated, \$1.50 per cwt. MILLFEED—City-ground coarse winter, \$11.00@11.50 per ton; fine do, \$11.00@11.50; finished winter middlings, \$13.00@14.50; coarse spring do, \$11.50@12.00.

The BEST PIANOS and ORGANS

IN THE WORLD

Are manufactured and sold for the least money by

THE BEST ARE THE CHEAPEST.



Write us for Illustrated Catalogue, Free.

BEETHOVEN
PIANO ORGAN CO.
WASHINGTON, WARREN CO. N.J.

MENTION THIS PAPER.

1831 THE CULTIVATOR 1890

AND
Country Gentleman

THE BEST OF THE
AGRICULTURAL WEEKLIES

DEVOTED TO

*Farm Crops and Processes,
Horticulture and Fruit-Growing,
Live-Stock and Dairying.*

While it also includes all minor departments of Rural interest, such as the Poultry Yard, Entomology, Bee-Keeping, Greenhouse and Grapery, Veterinary Recipes, Farm Questions and Answers, Fireside Reading, Domestic Economy, and a summary of the News of the Week. Its MARKET REPORTS are unusually complete, and much attention is paid to the Prospects of the Crops, as throwing light upon one of the most important of all questions—*When to Buy and When to Sell*. It is liberally illustrated, and by RECENT ENLARGEMENT, contains more reading matter than ever before. The Subscription Price is \$2.50 per year but we offer a SPECIAL REDUCTION in our

CLUB RATES FOR 1890!

Two Subscriptions, in one remittance, . . . \$4
Six Subscriptions, in one remittance, . . . 10
Twelve Subscriptions, in one remittance, . . . 18

To all New Subscribers for 1890, payable in advance now, we will send the PAPER WEEKLY, from our receipt of the remittance to January 1st, 1890, WITHOUT CHARGE.

SPECIMEN COPIES FREE. Address

LUTHER TUCKER & SON, Publishers
ALBANY, N. Y.



RELIANCE OIL & GREASE CO., CLEVELAND, O.,

—MANUFACTURERS OF—

Finest Lubricants for Milling Plants. A Challenge to the World.

WRITE US.

"VALVE OLEINE"—875 Degrees Fire Test, Cylinder Oil.

"RUSSIAN"—Engine and Machine Oil.

"CHIEF"—Roller Mill Lubricant.

"ANCHOR"—Roller Mill Grease.

"NIAGARA"—Belt Grease.

"CHELSEA"—Scale Solvent, Best on Market.

Agents Wanted.

FREE—SAMPLES, CATALOGUE, AND ALL INFORMATION.

**SPECIAL
HIGH GRADE
PRODUCTS**

THE "HARLOW" Positive Feed Lubricators.

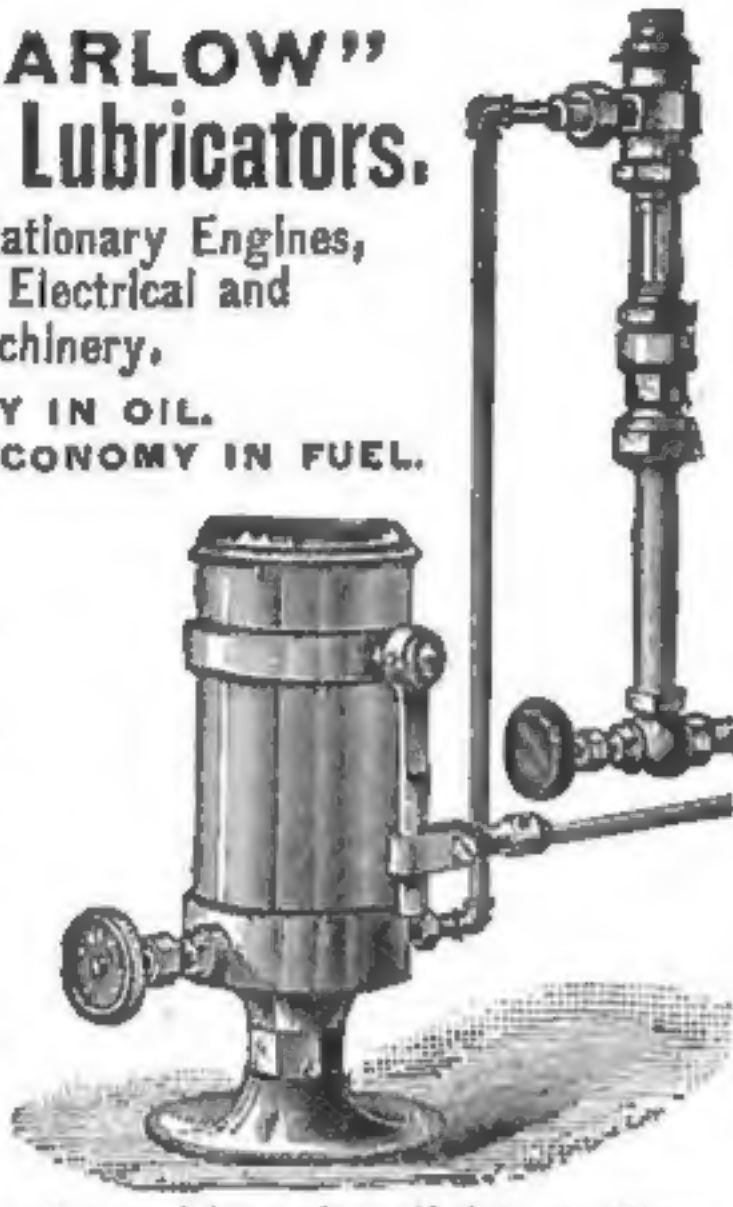
For Marine and Stationary Engines,
Steam Pumps, Electrical and
other Machinery.

**MAXIMUM ECONOMY IN OIL.
MARKED ECONOMY IN FUEL.**

Not dependent upon or
operated by Steam
Pressure, Condensa-
tion or Gravity.
Not affected by chan-
ges of temperature.

BEING operated by
some moving por-
tion of the engine or
machine to be lubri-
cated, the "Harlow
Lubricator" starts
and stops with the
engine or machine
being lubricated, without requiring the slightest atten-
tion from the engineer or operator, always delivering the
oil in any amount from a drop to a constant stream.
The cup can be filled at any moment while the engine
or machine being lubricated is in operation, without
causing any leakage either of oil or steam.

Harlow Lubricator Mfg. Co. BOSTON, Mass.
U. S. A.



New Improved Patent Head Linings.



DESCRIPTION.

These Linings are curved edgewise and flatwise, be-
sides having the edge beveled, so as to make them fit
the head and chine PERFECTLY, without springing
them edgewise when nailing.

If you use them once you will have NO
OTHER. No need of pounding fingers, as
the ends do not have to be held down while
nailing. They are much more convenient
to nail and look better than any other.
They are first tied in bundles of two hun-
dred, and when dry, are put into ties,
weighing about fifty pounds each, and tied
with two strong wires, to make them handle
better and to prevent loosening out in transit.
Write for prices and state about the num-
ber you use per year.

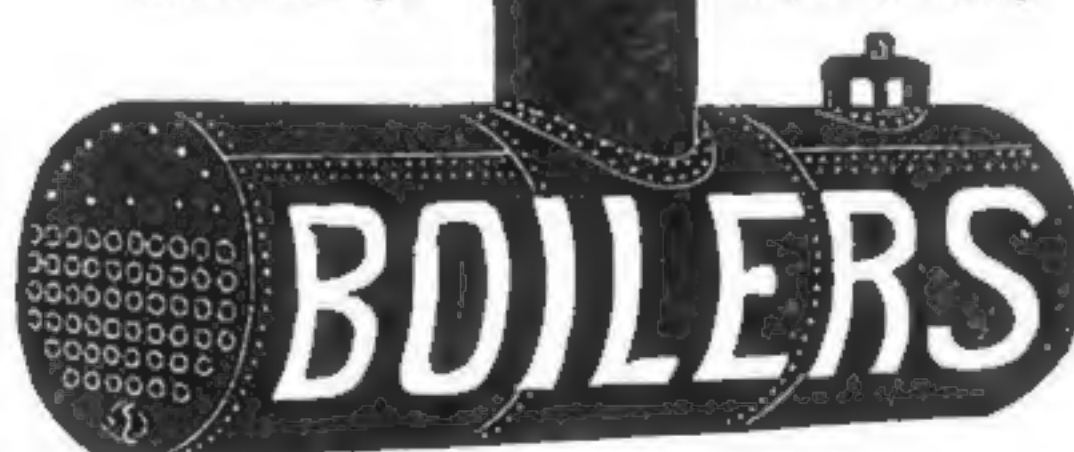
To convince you of their merit, and for
the purpose of introducing them, I will
ship a sample order of from five to ten
thousand at a REDUCED RATE.

SEND US A TRIAL ORDER: SATISFACTION
GUARANTEED.

J. H. PETERS,
Owner of Patent and Manufacturer,
COLEMAN, MICH.

EAGLE IRON WORKS, DETROIT, MICH.

MANFRS. OF HIGH GRADE



**HORIZONTAL, UPRIGHT
PORTABLE AND MARINE.**

Oil Tanks & Smoke Stacks,

HEAVY SHEET IRON WORK.

CORRESPONDENCE SOLICITED.

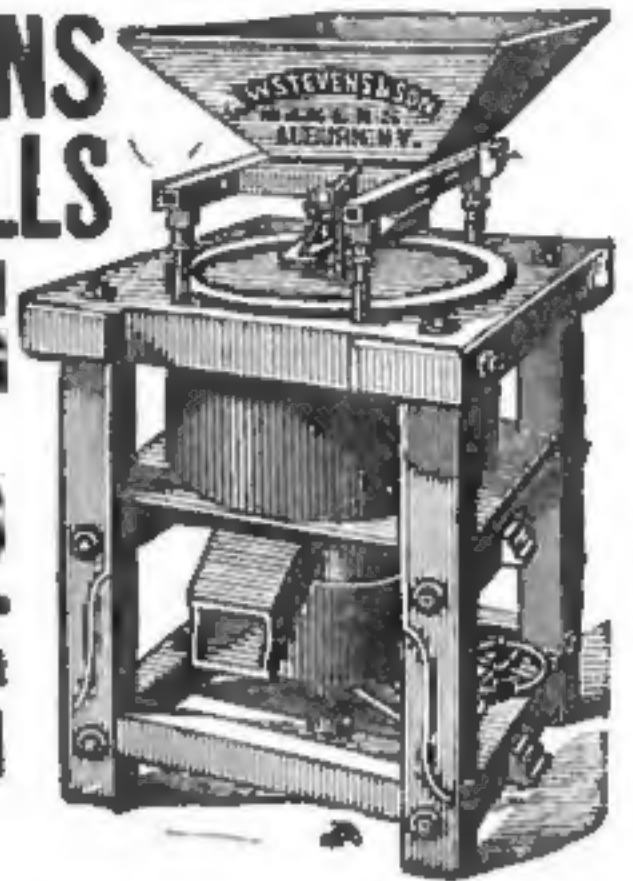
THE STEVENS PORTABLE MILLS

For CORN and
FEED GRINDING

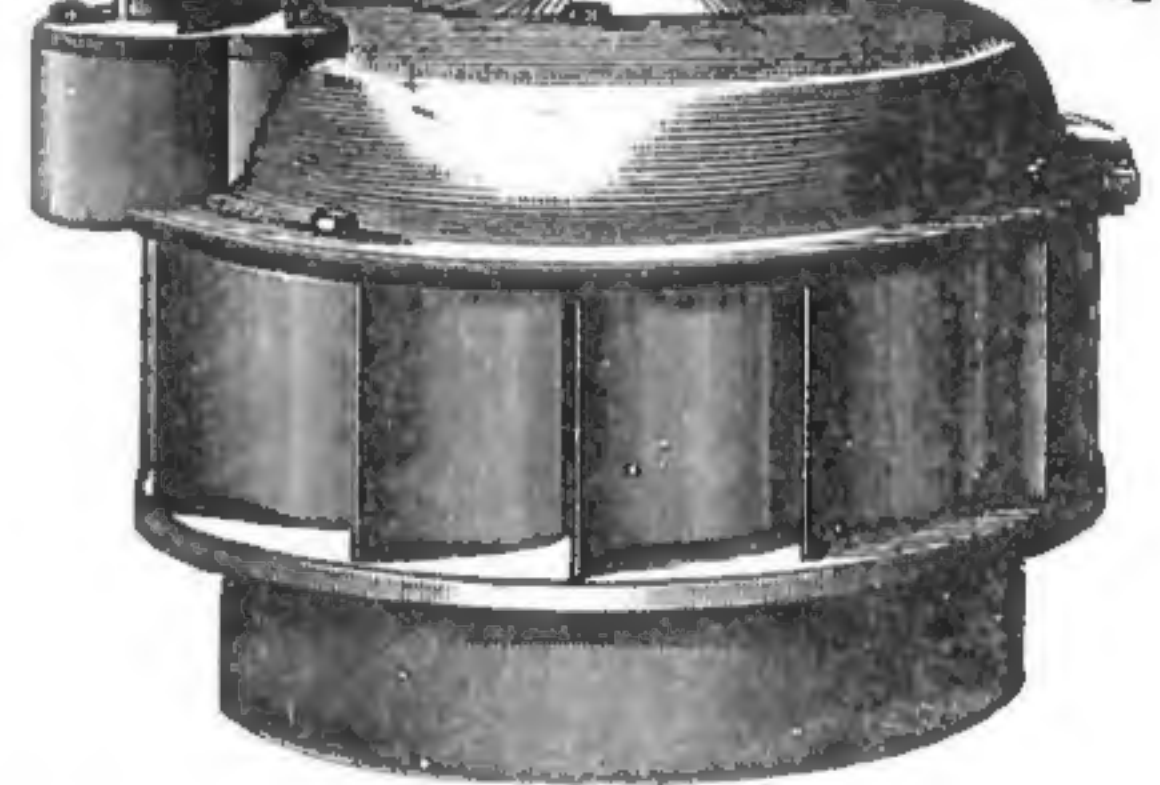
Genuine French
BUHR STONES

Power Corn Sheller
Prices Below the Lowest

A.W. STEVENS & SON
AUBURN, N. Y.
Mention this paper.



ALCOTT'S IMPROVED TURBINE WATER WHEEL

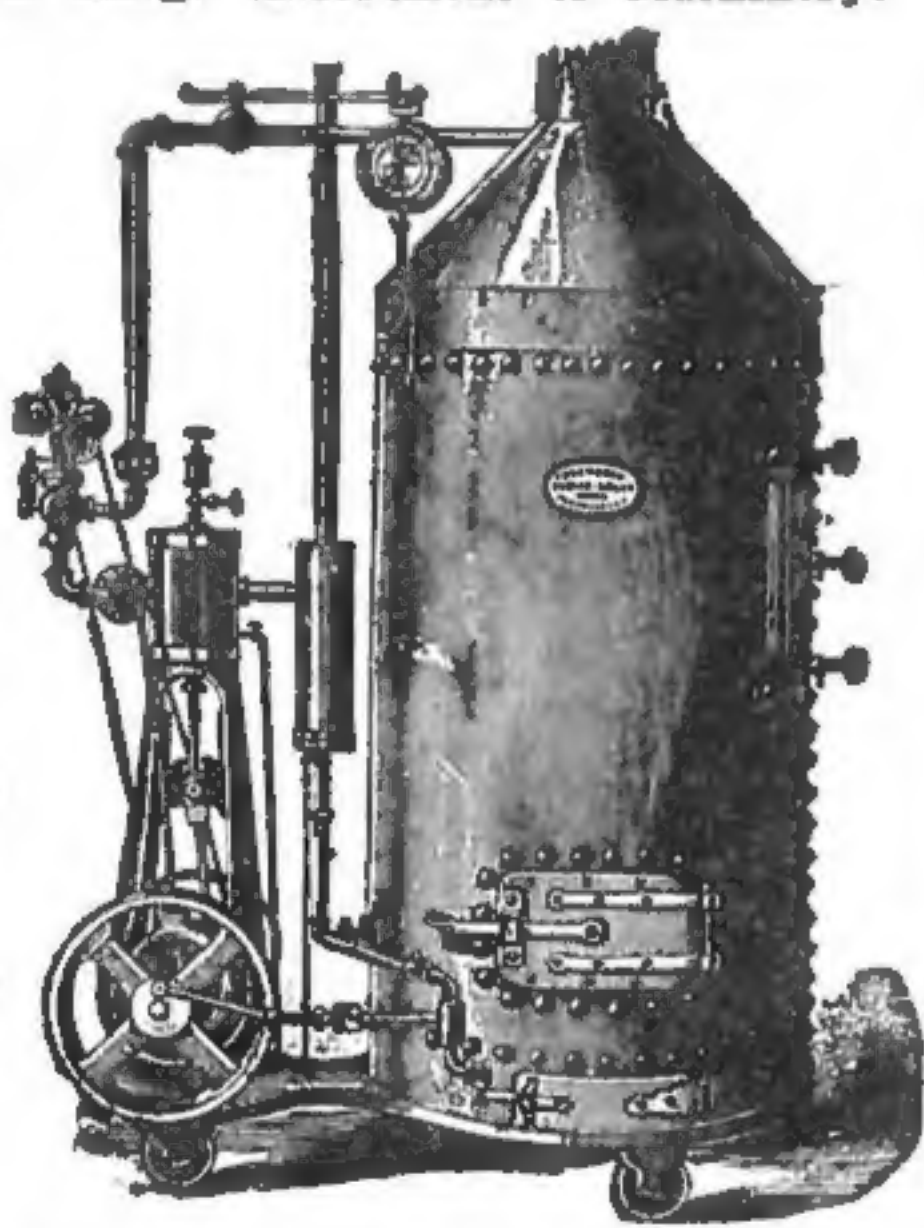


THIS WHEEL GIVES HIGH RESULTS, AND
IS ACKNOWLEDGED THE BEST, MOST PRAC-
TICAL AND EFFICIENT TURBINE MADE.
FOR SIMPLICITY, DURABILITY, AND
TIGHTNESS OF GATE IT HAS NO EQUAL.

State requirements and send for Catalogue to

**T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.**

The Best 8-Horse Power Semi-Portable Up-
right Engine and Boiler Made.



SPECIAL PRICE. GUARANTEED.

SEND FOR CATALOGUE.
ARMITAGE, HERSCHELL & CO.
Tonawanda N. Y.

The LIPPOLD DUSTLESS CORN SHELLER & CLEANER

MANUFACTURED BY

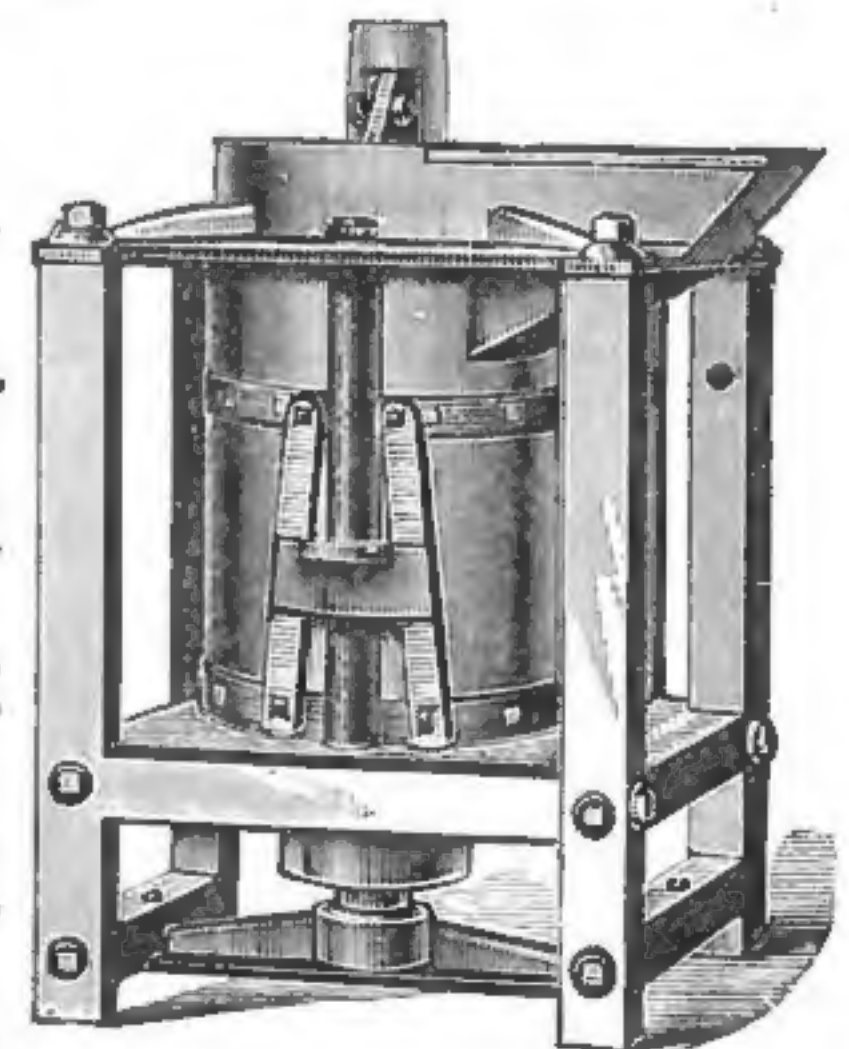
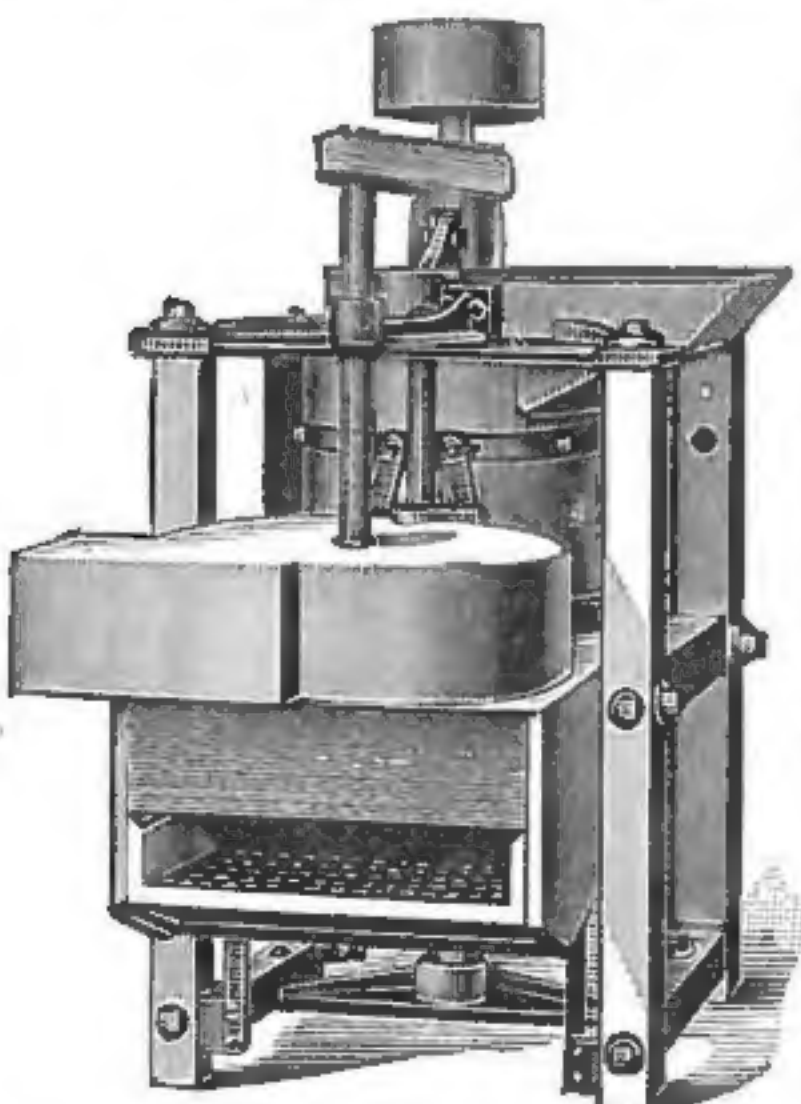
The LIPPOLD MFG. CO.
ERIE - - PENN.

THE HIGHEST CAPACITY for the LEAST MONEY.

The Best Machines for Mills and Elevators.

Machines Sent on Thirty Days' Trial.

SHELL UNHUSKED CORN AND CLEAN IT PERFECTLY.



WRITE FOR ILLUSTRATED CIRCULAR WITH PRICES.
NAME THIS PAPER.

INSURE IN THE TRADERS & TRAVELERS

Accident Company,
287 BROADWAY, NEW YORK.

BENEFITS.

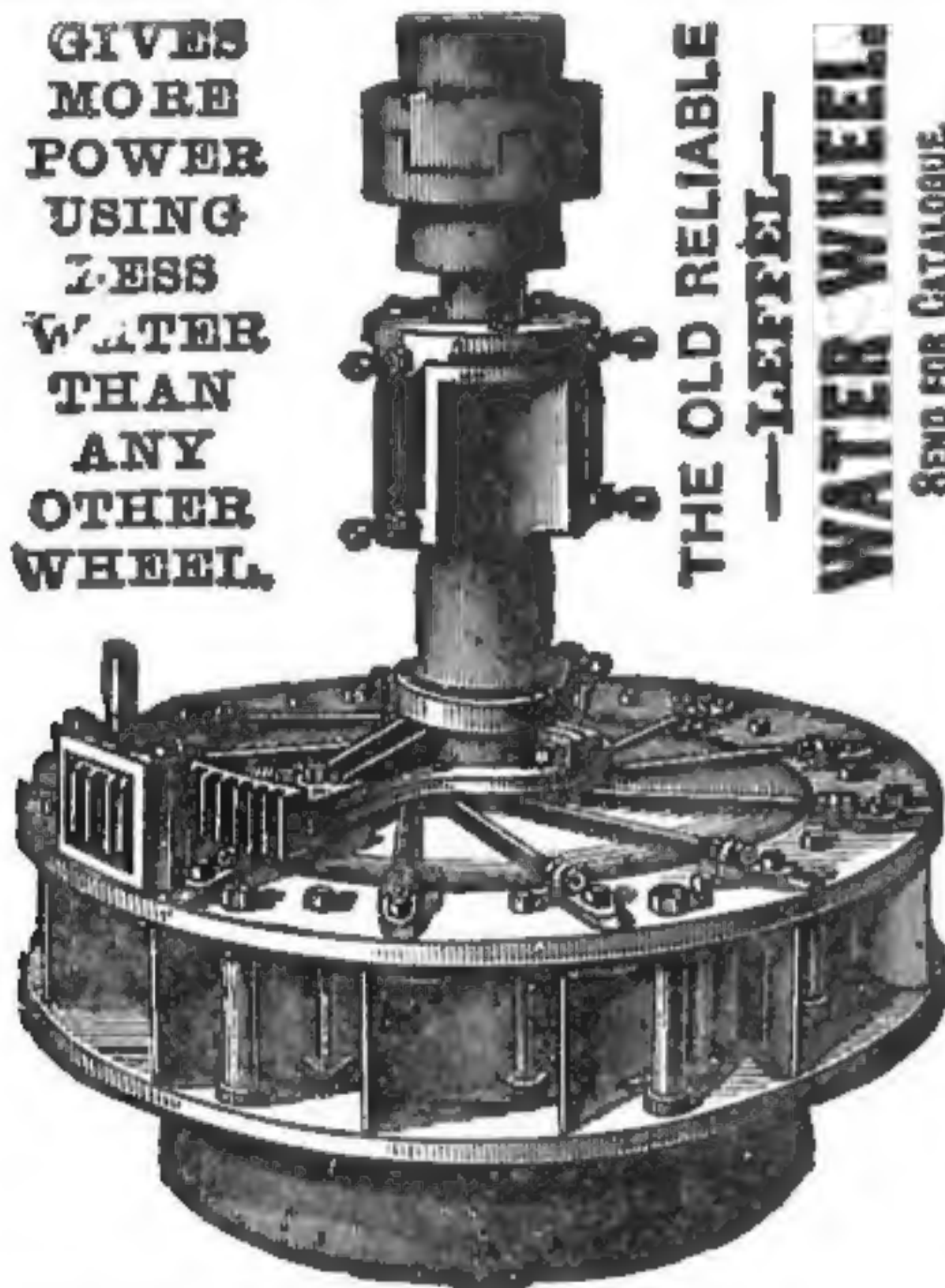
\$5,000 for Death.
\$5,000 Loss of Limbs.
\$2,500 Loss of Limb.
\$2,500 Loss of Sight.
\$1,250 Total Disability.
\$650 Loss of One Eye.
\$25 Weekly Indemnity for
26 Weeks.
One Set of Individual Registry Plates
Included.

COST.

Four Quarterly Payments, \$10.00
Annual Dues, - - - 1.00
Membership Fee, 5.00. \$11.00

IMPORTANT NOTICE.—The Traders & Travelers Accident Co. of New York desire the services of one responsible representative in each town to act as agent for the general transaction of their business. A liberal and permanent arrangement will be made with parties who can fill the above requirements. Address
C. S. SOMERVILLE, Sec'y.

GIVES
MORE
POWER
USING
LESS
WATER
THAN
ANY
OTHER
WHEEL.



THE OLD RELIABLE

—LEFFEL—

WATER WHEEL

SEND FOR CATALOGUE

JAMES LEFFEL & CO.
SPRINGFIELD, O., OR 110 LIBERTY ST., N.Y.

PREJUDICE Investigate the merits of the Reliance Safety Water Columns. It pays to keep posted. Many of the largest corporations have found it profitable to discard the old appliances and adopt these safeguards. There is always economy in safety. Send for illustrated price-list.
Reliance Gauge Co., 831 Sheriff St., Cleveland, Ohio.

SCIENTIFIC AMERICAN

ESTABLISHED 1845.

Is the oldest and most popular scientific and mechanical paper published and has the largest circulation of any paper of its class in the world. Fully illustrated. Best class of Wood Engravings. Published weekly. Send for specimen copy. Price \$3 a year. Four months' trial, \$1. MUNN & CO., PUBLISHERS, 361 Broadway, N.Y.

ARCHITECTS & BUILDERS

Edition of Scientific American.

A great success. Each issue contains colored lithographic plates of country and city residences or public buildings. Numerous engravings and full plans and specifications for the use of such as contemplate building. Price \$2.50 a year, 25 cts. a copy. MUNN & CO., PUBLISHERS.

PATENTS

may be secured by applying to MUNN & CO., who have had over 40 years' experience and have made over 100,000 applications for American and Foreign patents. Send for Handbook. Correspondence strictly confidential.

TRADE MARKS.

In case your mark is not registered in the Patent Office, apply to MUNN & CO., and procure immediate protection. Send for Handbook.

COPYRIGHTS for books, charts, maps, etc., quickly procured. Address

MUNN & CO., Patent Solicitors.

GENERAL OFFICE: 361 BROADWAY, N. Y.

THE BEST AND CHEAPEST CORN AND COB CRUSHER IN THE WORLD.

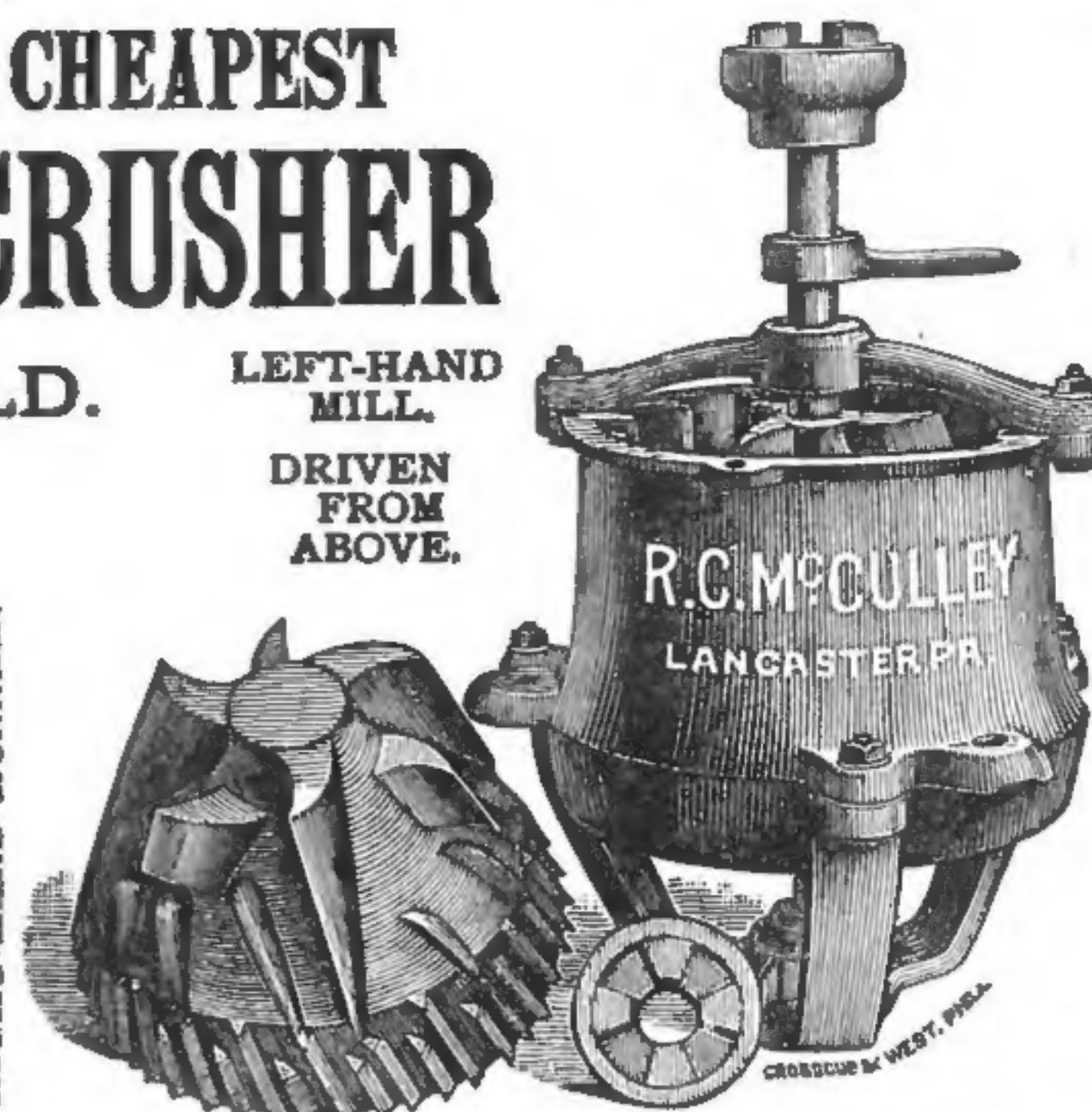
All wearing parts cast of a steel mixture. Notice difference in construction. Most area where most work is done, where all other crushers have least area where most work is done. Low priced machinery is not the cheapest, considering durability and efficiency. Sent on 80 days' trial when satisfactory reference is furnished.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.

LEFT-HAND
MILL.
DRIVEN
FROM
ABOVE.

RIGHT-HAND RUNNER.



\$15

WILL BUY THE BEST AND CHEAPEST CORN & COB CRUSHER IN THE WORLD.



Our crushers are made of a 'special quality' of material that insures years of service. Thousands of these crushers are in use throughout the United States and Canada. Send for circular, giving testimonials from millers who are using them, and know a good thing when they see it.

T. B. WOOD'S SONS, CHAMBERSBURG, PA.

Manufacturers of
Shafting, Pulleys, Hangers, Mill Gearing, Etc.

SCRIBNER'S
MAGAZINE



AN IMPORTANT
CLUB OFFER

SCRIBNER'S MAGAZINE



Gives its readers literature of lasting interest and value. It is fully and beautifully illustrated and has already gained a more than national circulation exceeding 125,000 copies monthly.

PRICE 25 CENTS A NUMBER. \$3.00 A YEAR.

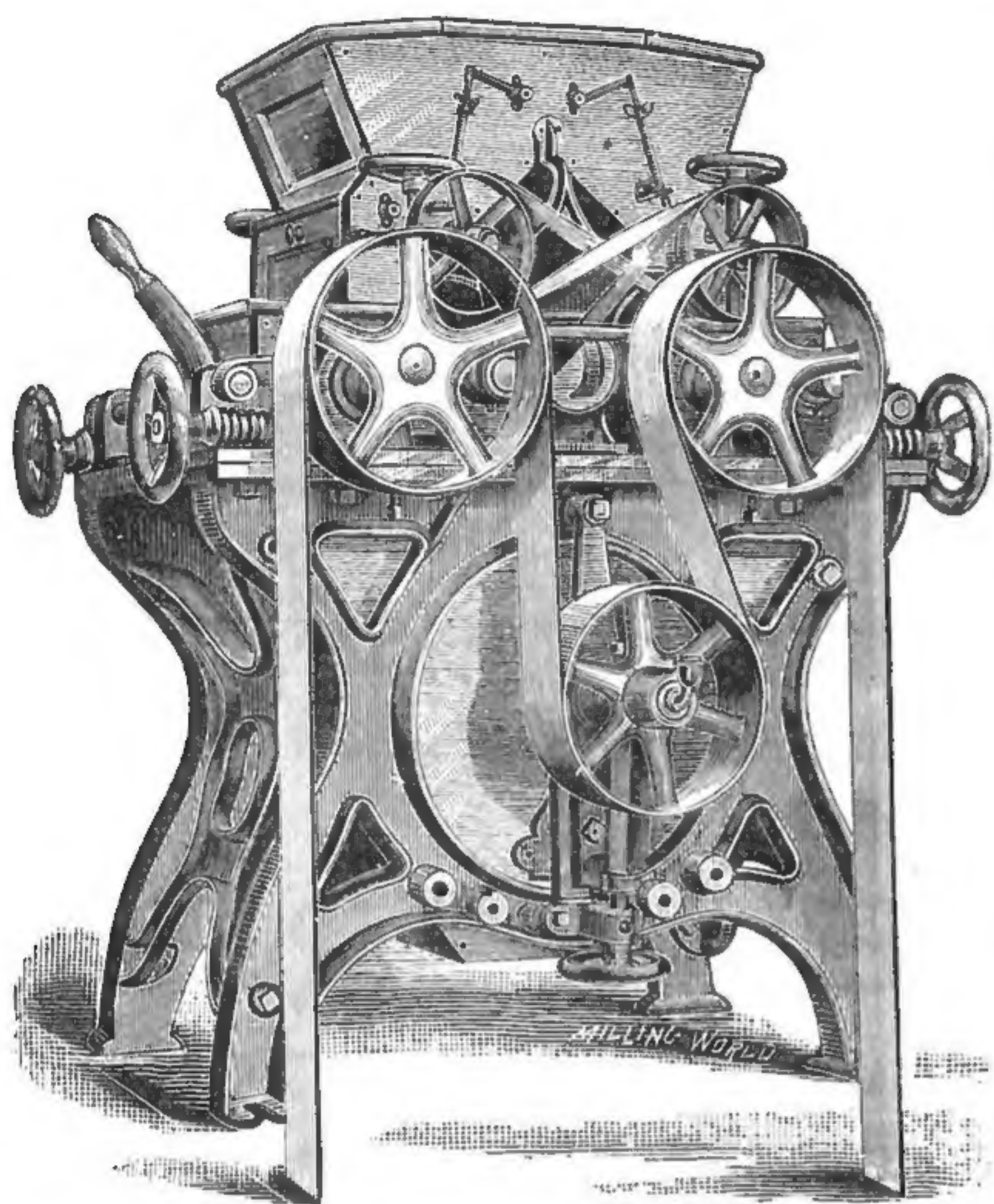
SPECIAL ARRANGEMENTS with Messrs. Charles Scribner's Sons the Publishers enable us to offer SCRIBNER'S MAGAZINE with the

"Milling World" at the low combination rate \$3.50 for both. Send your order now. Subscriptions may begin at once. Address,

McFaul & Nolan, - Buffalo, N. Y.

PARTIES WILL PLEASE MENTION THIS PAPER
WHEN WRITING TO ADVERTISERS.

JOHN HUTCHISON MFG. CO., Mill Builders and Mill Furnishers.



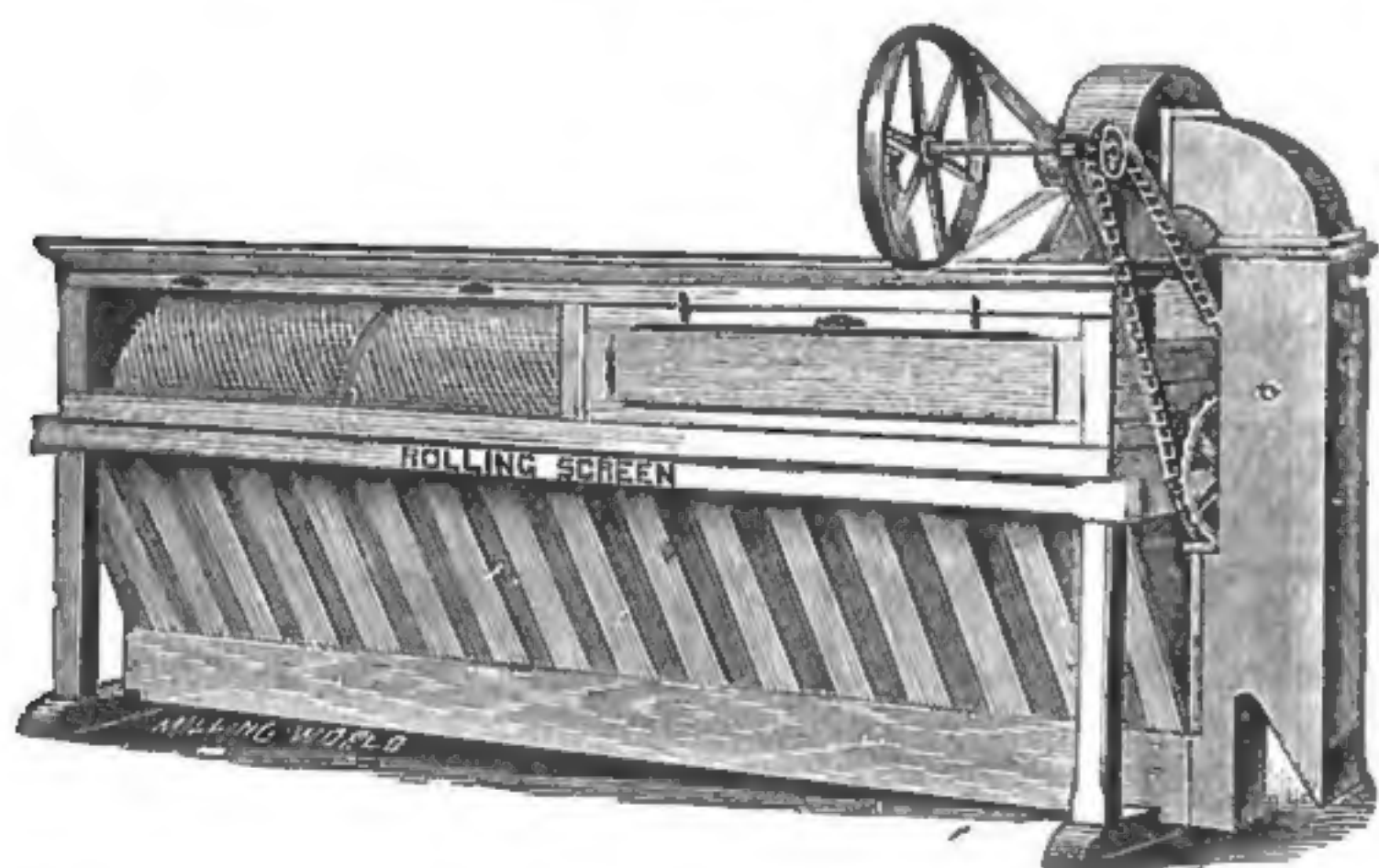
"The Rickerson." The original six inch 4 Roller Mill. We now own the patents on this mill and after greatly improving the mill manufacture them in four sizes:

6x12 inch.

6x18 inch.

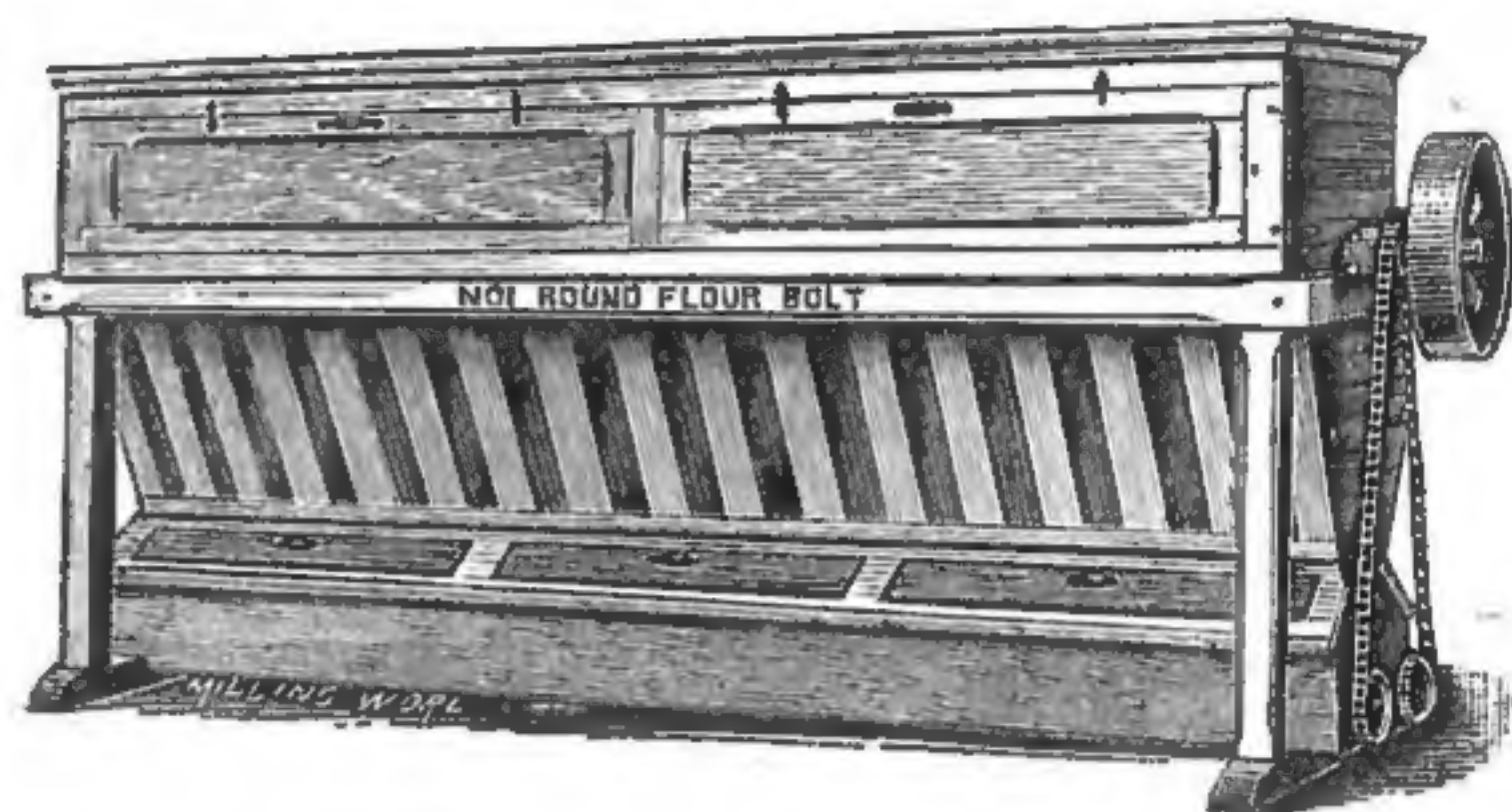
6x15 "

6x20 "

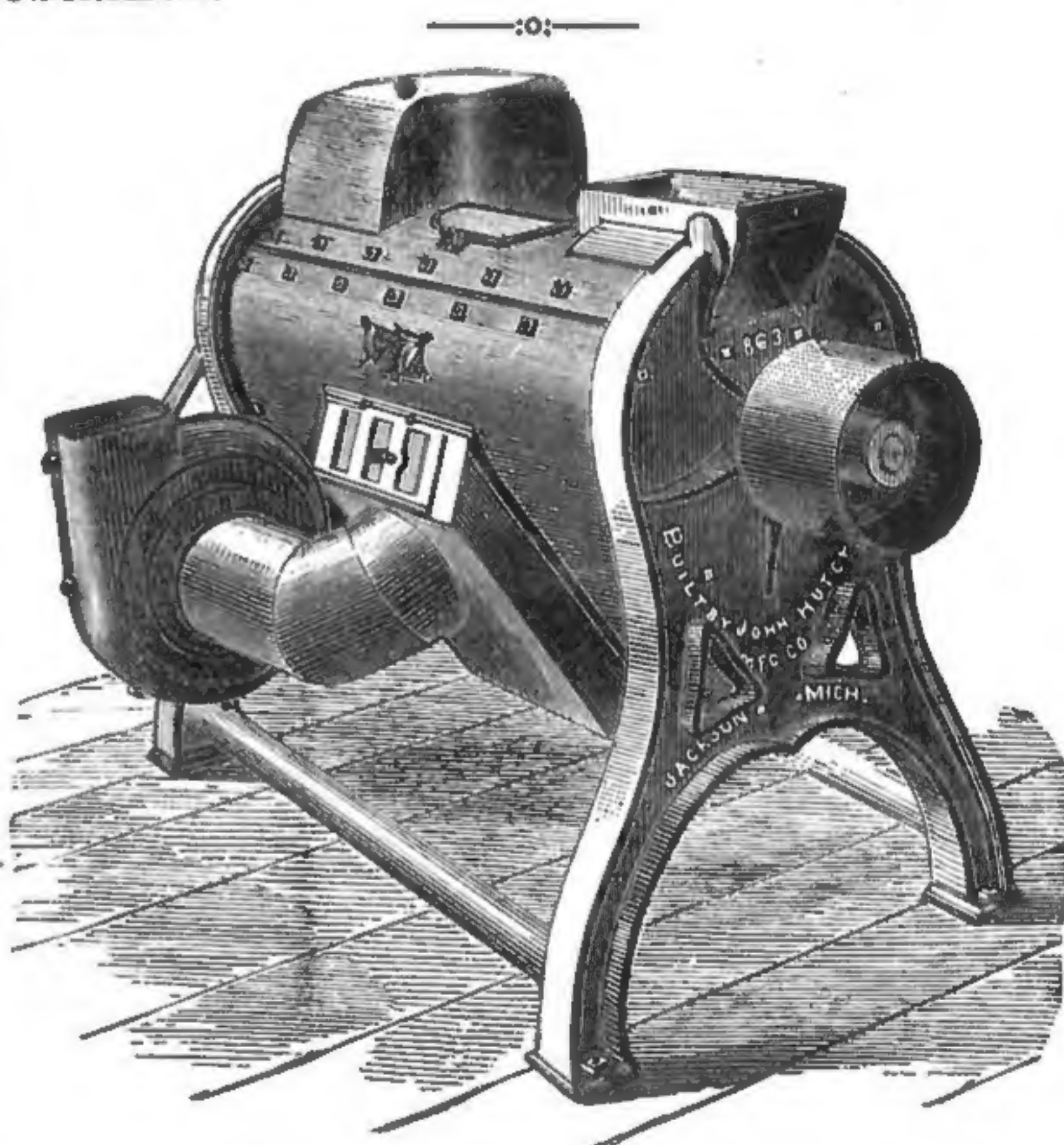


The above cut represents our New Rolling Screen, which is absolutely dustless and has as much scouring qualities as any two scouring machines now being made.

Send for Estimates for Our Full Roller Mills of any Capacity.



The above cut shows our New Round Slow Running Flour Bolt. We also build a Cylinder or Round Scalping Reel and we have lately built a number of new mills of medium capacity, using our Roller Mills, our Round Flour Bolts and Scalping Reels, getting better results than is usually obtained.



Hutchison's New Dustless Iron Corn Sheller, especially adapted for Mill and Elevator use.

ADDRESS ALL CORRESPONDENCE TO:—

John Hutchison Mfg. Co.

JACKSON. • • MICHIGAN.



ELEVATOR BUCKET.

CORRUGATIONS

What we know of corrugations can be found out by writing to US, or H. W. Caldwell, Chicago, Ill.

Stamping and Pressing of Sheet Metals for all Classes of Work. Also Tinning, Galvanizing and Japanning.

THE AVERY STAMPING CO.,

Cleveland, Ohio. U. S. A.

New York Office, 51 Cliff Street, HALL & NEAR, Agents.



CALDWELL'S PATENT.



SELF-TRAMMING

PORTABLE MILL

BEST GRINDING MILL MADE.

BOLTING CLOTH

AND

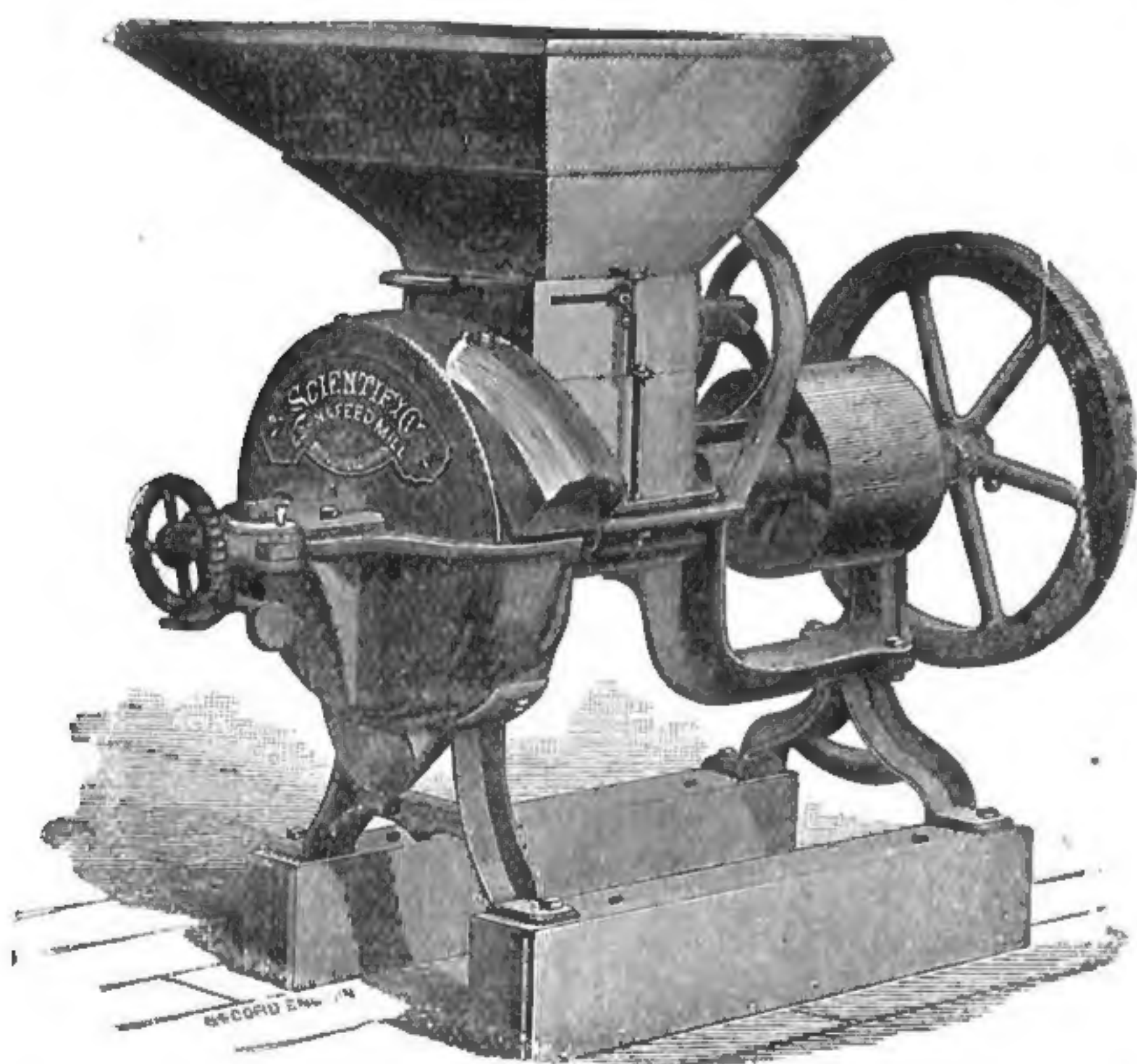
BURR AND ESOPUS MILLSTONES

WRITE FOR DISCOUNTS.

SAMUEL CAREY,

17 Broadway,

NEW YORK.



THE SCIENTIFIC GRINDING MILL.

POSITIVELY THE BEST MILL ON EARTH.

GRINDS PERFECTLY, EAR CORN, SHELLLED CORN, AND ALL GRAINS.

GRINDING PLATES A SPECIAL METAL

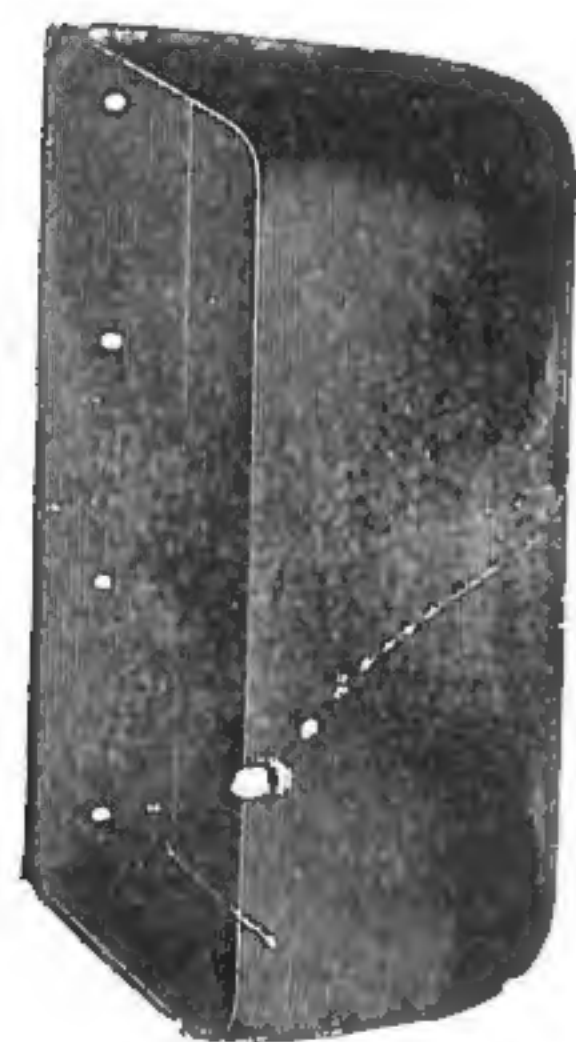
Hard as Steel, Guaranteed to Grind from Five to Eight Thousand Bushels before wearing out.

SEND FOR ILLUSTRATED CATALOGUE, PRICES, ETC.

THE FOOS MFG. CO.

SPRINGFIELD OHIO.

STILL ON TOP.



Perhaps the HIGHEST COMPLIMENT that could be paid the "Salem" bucket is the fact that during the past few years ITS SHAPE HAS BEEN SO CLOSELY IMITATED by other manufacturers as to infringe our patented rights, but experience reveals the IMPERFECTIONS OF IMITATIONS, and we therefore take it as a FURTHER COMPLIMENT to the "SALEM" bucket that some of its old patrons who were *Induced to Try the Imitations have now Returned to the Salem Bucket, thereby Acknowledging it to be the Most Satisfactory.* Don't be deceived by other makes of buckets that are claimed to be "Just as Good." Insist upon having the ORIGINAL AND RELIABLE SALEM BUCKET. All legitimate Salem buckets are plainly marked with the word

SALEM

W. J. CLARK & CO., SOLE Manufacturers SALEM, OHIO.

THORNBURGH & GLESSNER, General Agents, CHICAGO, ILL.